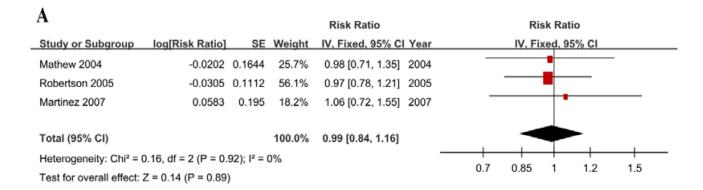
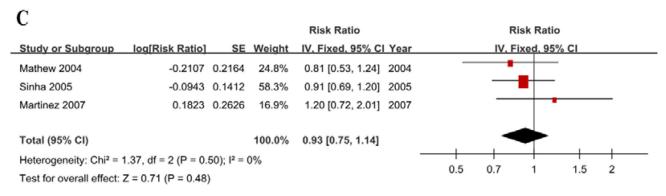
## Association between red and processed meat intake and colorectal adenoma incidence and recurrence: a systematic review and meta-analysis

## SUPPLEMENTARY MATERIALS







**Supplementary Figure 1: Forest plots of red meat intake and colorectal adenoma recurrence.** (A) Total colorectal adenoma. (B) Advanced colorectal adenoma. (C) Multiple colorectal adenoma.

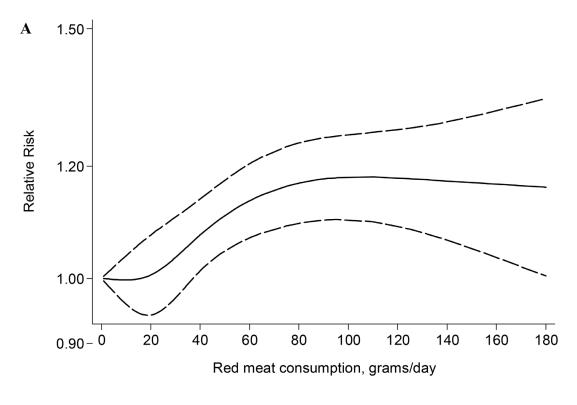
A				Risk Ratio			F	Risk Ratio		
Study or Subgroup	log[Risk Ratio]	SE	Weight	IV, Fixed, 95% CI	Year		IV, I	Fixed, 95%	CI	
Mathew 2004	-0.0834	0.155	27.9%	0.92 [0.68, 1.25]	2004			•		
Robertson 2005	0.1398	0.112	53.4%	1.15 [0.92, 1.43]	2005			+	_	
Martinez 2007	0.2564	0.1894	18.7%	1.29 [0.89, 1.87]	2007				•	_
Total (95% CI)			100.0%	1.10 [0.94, 1.30]					•	
Heterogeneity: Chi <sup>2</sup> = 2	2.21, df = 2 (P = 0.3	33); I² = 9	9%			0.5	0.7	1	1.5	2
Test for overall effect: 2	Z = 1.21 (P = 0.23)					0.5	0.7		1.5	2

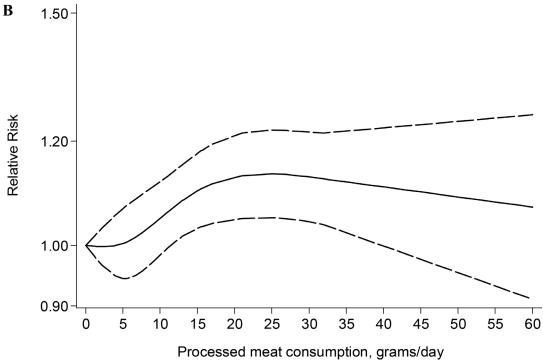
B

			Risk Ratio	Risk Ratio
Study or Subgroup	log[Risk Ratio] S	E Weight	IV, Fixed, 95% CI Year	IV, Fixed, 95% CI
Mathew 2004	-0.1985 0.329	4 8.1%	0.82 [0.43, 1.56] 2004	•
Robertson 2005	0.5596 0.27	4 11.6%	1.75 [1.02, 2.99] 2005	
Sinha 2005	0.0583 0.112	6 68.9%	1.06 [0.85, 1.32] 2005	
Martinez 2007	0.3853 0.277	5 11.4%	1.47 [0.85, 2.53] 2007	<u> </u>
Total (95% CI)		100.0%	1.14 [0.95, 1.37]	
Heterogeneity: Chi <sup>2</sup> = 4	.70, df = 3 (P = 0.19); I <sup>2</sup>	= 36%		0.5 0.7 1 1.5 2
Test for overall effect: 2	Z = 1.42 (P = 0.15)			0.5 0.7 1 1.5 2

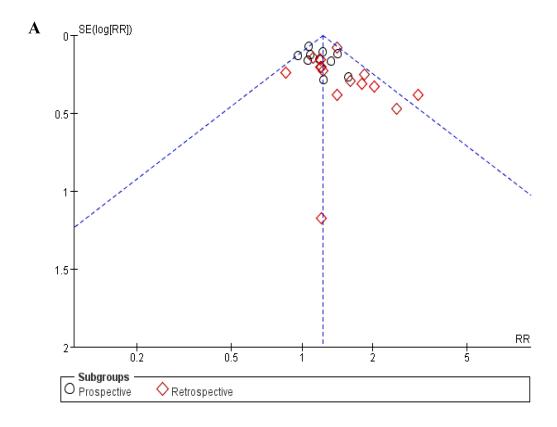
C			Risk Ratio	Risk Ratio
Study or Subgroup	log[Risk Ratio] SE	Weight	IV, Random, 95% CI Year	IV, Random, 95% CI
Mathew 2004	-0.1278 0.2127	32.1%	0.88 [0.58, 1.34] 2004	
Sinha 2005	-0.1054 0.1356	40.4%	0.90 [0.69, 1.17] 2005	-
Martinez 2007	0.6043 0.2597	27.5%	1.83 [1.10, 3.04] 2007	
Total (95% CI)		100.0%	1.09 [0.73, 1.62]	
Heterogeneity: Tau <sup>2</sup> =	0.09; Chi <sup>2</sup> = 6.38, df = 2 (F	P = 0.04); I <sup>2</sup>	= 69%	
Test for overall effect:	Z = 0.40 (P = 0.69)			0.5 0.7 1 1.5 2

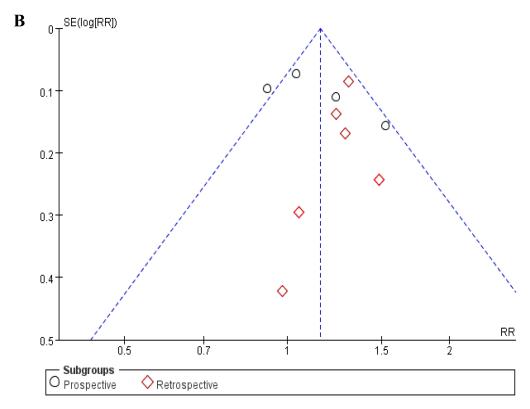
Supplementary Figure 2: Forest plots of processed meat intake and colorectal adenoma recurrence. (A) Total colorectal adenoma. (B) Advanced colorectal adenoma. (C) Multiple colorectal adenoma.





**Supplementary Figure 3:** Nonlinear associations between (A) red meat intake and (B) processed meat intake and colorectal adenoma incidence.





Supplementary Figure 4: Funnel plots evaluating publication bias of red and processed meat intake and colorectal adenoma incidence. (A) Red meat. (B) Processed meat. SE: standard error. RR: relative risk.

Supplementary Table 1: Subgroup analyses of red meat intake for Highest vs Lowest comparisons and CRA incidence

Subgroups	Red meat							
	N	RR (95% CI)	$P_{\rm o}$	$P_{_{ m h}}$	$I_h^{2}(\%)$			
All studies	25	1.23 (1.15–1.31)	<.01	.13	25			
Geographic area								
America	15	1.22 (1.14–1.31)	< .01	.15	28			
Europe	6	1.25 (1.03–1.52)	.02	.14	40			
Asia	4	1.22 (1.00–1.50)	.05	.26	25			
Sample size								
≥ 500	11	1.21 (1.13–1.30)	< .01	.27	18			
< 500	14	1.27 (1.12–1.44)	< .01	.12	32			
Publication year								
2005 or later	17	1.21 (1.13–1.29)	< .01	.21	21			
Before 2005	8	1.38 (1.15–1.65)	< .01	.20	29			
Adjustments Smok	ing							
Yes	16	1.22 (1.14–1.30)	< .01	.13	30			
No	9	1.28 (1.08–1.53)	< .01	.25	21			
Alcohol								
Yes	15	1.21 (1.13–1.30)	< .01	.13	30			
No	10	1.29 (1.10-1.51)	< .01	.26	20			
BMI								
Yes	16	1.29 (1.20–1.40)	< .01	.09	34			
No	9	1.11 (0.99–1.23)	.06	.88	0			
Energy intake								
Yes	17	1.25 (1.16–1.34)	< .01	.04	41			
No	8	1.16 (1.01–1.33)	.04	.82	0			
Physical activity								
Yes	16	1.23 (1.15–1.32)	< .01	.12	30			
No	9	1.20 (1.03–1.41)	.02	.24	23			
Dietary fiber								
Yes	8	1.21 (1.10–1.32)	< .01	.16	33			
No	17	1.24 (1.14–1.35)	< .01	.17	24			
Family history of	CRC/polyps							
Yes	10	1.21 (1.09–1.33)	< .01	.50	0			
No	15	1.24 (1.14–1.35)	< .01	.06	40			
NSAIDs								
Yes	12	1.24 (1.15–1.33)	<.01	.12	34			
No	13	1.19 (1.05–1.35)	< .01	.25	19			

NOTE. Boldface indicates statistical significance. N: number of included studies. CRA: colorectal adenoma. CRC: colorectal cancer. BMI: body mass index. NSAIDs: non-steroidal anti-inflammatory drugs.  $P_0$ : test for over effect.  $P_h$ : P value for heterogeneity within each subgroup.  $I_s^2$ :  $I^2$  value for heterogeneity within each subgroup.

Supplementary Table 2: Subgroup analyses of processed meat intake for Highest vs Lowest comparisons and CRA incidence

Subgroups	Processed meat								
	N	RR (95% CI)	$P_{\rm o}$	$P_{\rm h}$	$I_h^{2}(\%)$				
All studies	10	1.15 (1.07–1.24)	< .01	.10	39				
Geographic area									
America	9	1.15 (1.06–1.24)	< .01	.07	44				
Europe	0	-	-	-	-				
Asia	1	1.28 (0.92–1.78)	.14	-	-				
Sample size									
≥ 500	7	1.18 (1.04–1.33)	.01	.04	55				
< 500	3	1.23 (0.88–1.72)	.22	.56	0				
Publication year									
2005 or later	9	1.16 (1.04–1.30)	< .01	.09	41				
Before 2005	1	1.48 (0.92–2.38)	.11	-	-				
Adjustments Smoking	· •								
Yes	10	1.18 (1.06–1.31)	< .01	.54	0				
No	0	-	-	-	-				
Alcohol									
Yes	7	1.13 (1.04–1.22)	< .01	.13	40				
No	3	1.45 (1.14–1.86)	.20	.90	0				
BMI									
Yes	8	1.18 (1.05–1.32)	< .01	.22	26				
No	2	1.23 (0.85–1.77)	.28	.03	79				
<b>Energy intake</b>									
Yes	8	1.17 (1.04–1.33) < .01		.05	51				
No	2	1.23 (0.91–1.68)	.55	-	-				
Physical activity									
Yes	10	1.18 (1.06–1.31)	< .01	.54	0				
No	0	-	-	-	-				
Dietary fiber									
Yes	5	1.11 (0.99–1.24)	.07	.53	0				
No	5	1.21 (1.02–1.45)	.03	.03	63				
Family history of CR	.C/polyps								
Yes	6	1.16 (0.97–1.39)	.10	.09	47				
No	4	1.19 (1.03–1.38)	.02	.16	42				
NSAIDs									
Yes	8	1.18 (1.04–1.34)	.01	.05	51				
No	2	1.20 (0.93–1.55)	.16	.61	0				

NOTE. Boldface indicates statistical significance.

N: number of included studies. CRA: colorectal adenoma. CRC: colorectal cancer. BMI: body mass index. NSAIDs: nonsteroidal anti-inflammatory drugs.  $P_0$ : test for over effect.  $P_h$ : P value for heterogeneity within each subgroup.  $I_s^2$ :  $I^2$  value for heterogeneity within each subgroup.