

# Supplementary appendix

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**Table S1: Analytical procedures to detect hints of uncertainty and bias (not) used in the original meta-analysis to state conclusions on the association between physical activity and cancer.**

References <sup>#</sup>	Cancer site	Did the original meta-analysis performed the criteria to state conclusion?							
		Number of cases	Random effects P<10 <sup>-6</sup> *	Largest study <sup>‡</sup> with p<0.05**	I <sup>2</sup> <50%	95% prediction interval excluding the null value	Small study effect test	Excess significance test	Credibility ceiling test
Behrens et al. (1)	Kidney	Yes	No	Partially	Yes	No	Yes	No	No
Behrens et al. (2)	Esophageal	Yes	No	Partially	Yes	No	Partially	No	No
Behrens et al. (3)	Pancreas	Yes	No	Partially	Yes	No	Partially	No	No
Boyle et al. (4)	Proximal and Distal Colon	Partially	No	Partially	Yes	No	Yes	No	No
Brenner et al. (5)	Lung	Partially	No	Partially	Yes	No	Partially	No	No
Jochem et al. (6)	Hematologic***	Yes	No	Partially	Yes	No	Yes	No	No
Keimling et al. (7)	Bladder	Yes	No	Partially	Yes	No	Partially	No	No
Li et al. (8)	All cancer mortality	Yes	No	Partially	Yes	No	Partially	No	No
Neilson et al. (9)	Breast	Partially	No	No	Yes	No	Yes	No	No
Niedermaier et al. (10)	Meningioma and Glioma	Yes	No	Partially	Yes	No	Yes	No	No
Pizot et al. (11)	Breast	Partially	No	No	Yes	No	Partially	No	No
Psaltopoulou et al. (12)	Gastric	Partially	No	Partially	Yes	No	Yes	No	No
Robsahm et al. (13)	Rectum	Yes	No	Partially	Yes	No	Yes	No	No
Samad et al. (14)	Rectum	Partially	No	Partially	No	No	No	No	No
Schmid et al. (15)	Thyroid	Yes	No	Partially	Partially	No	Partially	No	No
Schmid et al. (16)	Endometrial	Yes	No	Partially	Yes	No	Partially	No	No
Shi et al. (17)	Multiple sites	Partially	No	Partially	Yes	No	Partially	No	No
Wolin et al. (18)	Colon	No	No	No	No	No	Partially	No	No
Zhong et al. (19)	Ovary	Yes	No	Partially	Yes	No	Partially	No	No

<sup>#</sup>Systematic reviews and meta-analyses included in the umbrella review. \*systematic review should report the exact P value instead of threshold used (e.g. P<0.05 or 95% CI did not include the null value). \*\*Classified as "yes" if reported the RR/OR value (exact value; figure only was not considered) and its 95% confidence intervals. \*\*\*Included Non-Hodgkin and Hodgkin lymphoma, Chronic lymphocytic lymphoma/small lymphocytic lymphoma, Diffuse large B-cell lymphoma, Follicular lymphoma, Leukemia, and Multiple myeloma; <sup>‡</sup> largest original study (smallest SE) included in the meta-analysis.

yes	
Partially	yes, but apparently did not consider to state conclusion (i.e. it was not stated in the method as a robustness evidence criteria or mentioned in the discussion)
No	

**Table S2: Search Strategy**

The search was conducted at 22 November 2016 with the following descriptors:

(((((((((((((((physical activity) OR physical inactivity) OR motor activity) OR "physical exercise") OR exercise) OR "moderate to vigorous physical activity") OR walking) OR cycling) OR "aerobic exercise") OR sedentary lifestyle) OR sports) OR endurance training) OR players) OR occupational physical activity) OR "leisure-time physical activity") OR active commuting) OR active transport) OR cardiorespiratory fitness) OR resistance training) OR "household physical activity") OR weight training) OR cardiovascular fitness)) AND ((((((((cancer) OR neoplasia) OR neoplasm) OR malign\*) OR cancers) OR tumour) OR tumor) OR adenocarcinoma) OR carcinoma) OR sarcoma)) AND ((("systematic review") OR meta-analysis)

### Search Translation:

Descriptor	Search translation
<b>physical activity</b>	"motor activity"[MeSH Terms] OR ("motor"[All Fields] AND "activity"[All Fields]) OR "motor activity"[All Fields] OR ("physical"[All Fields] AND "activity"[All Fields]) OR "physical activity"[All Fields]
<b>physical</b>	"physical examination"[MeSH Terms] OR ("physical"[All Fields] AND "examination"[All Fields]) OR "physical examination"[All Fields] OR "physical"[All Fields]
<b>motor activity</b>	"motor activity"[MeSH Terms] OR ("motor"[All Fields] AND "activity"[All Fields]) OR "motor activity"[All Fields]
<b>exercise</b>	"exercise"[MeSH Terms] OR "exercise"[All Fields]
<b>walking</b>	"walking"[MeSH Terms] OR "walking"[All Fields]
<b>sedentary lifestyle</b>	"sedentary lifestyle"[MeSH Terms] OR ("sedentary"[All Fields] AND "lifestyle"[All Fields]) OR "sedentary lifestyle"[All Fields]
<b>sports</b>	"sports"[MeSH Terms] OR "sports"[All Fields]
<b>training</b>	"education"[Subheading] OR "education"[All Fields] OR "training"[All Fields] OR "education"[MeSH Terms] OR "training"[All Fields]
<b>commuting</b>	"transportation"[MeSH Terms] OR "transportation"[All Fields] OR "commuting"[All Fields]
<b>active transport</b>	"biological transport, active"[MeSH Terms] OR ("biological"[All Fields] AND "transport"[All Fields] AND "active"[All Fields]) OR "active biological transport"[All Fields] OR ("active"[All Fields] AND "transport"[All Fields]) OR "active transport"[All Fields]
<b>resistance training</b>	"resistance training"[MeSH Terms] OR ("resistance"[All Fields] AND "training"[All Fields]) OR "resistance training"[All Fields]
<b>weight training</b>	"weight lifting"[MeSH Terms] OR ("weight"[All Fields] AND "lifting"[All Fields]) OR "weight lifting"[All Fields] OR ("weight"[All Fields] AND "training"[All Fields]) OR "weight training"[All Fields]
<b>cardiovascular</b>	"cardiovascular system"[MeSH Terms] OR ("cardiovascular"[All Fields] AND "system"[All Fields]) OR "cardiovascular system"[All Fields] OR "cardiovascular"[All Fields]
<b>cancer</b>	"neoplasms"[MeSH Terms] OR "neoplasms"[All Fields] OR "cancer"[All Fields]
<b>neoplasia</b>	"neoplasms"[MeSH Terms] OR "neoplasms"[All Fields] OR "neoplasia"[All Fields]
<b>neoplasm</b>	"neoplasms"[MeSH Terms] OR "neoplasms"[All Fields] OR "neoplasm"[All Fields]
<b>cancers</b>	"neoplasms"[MeSH Terms] OR "neoplasms"[All Fields] OR "cancers"[All Fields]
<b>tumour</b>	"tumour"[All Fields] OR "neoplasms"[MeSH Terms] OR "neoplasms"[All Fields] OR "tumor"[All Fields]
<b>tumor</b>	"tumour"[All Fields] OR "neoplasms"[MeSH Terms] OR "neoplasms"[All Fields] OR "tumor"[All Fields]
<b>adenocarcinoma</b>	"adenocarcinoma"[MeSH Terms] OR "adenocarcinoma"[All Fields]
<b>carcinoma</b>	"carcinoma"[MeSH Terms] OR "carcinoma"[All Fields]
<b>sarcoma</b>	"sarcoma"[MeSH Terms] OR "sarcoma"[All Fields]
<b>meta-analysis</b>	"meta-analysis"[Publication Type] OR "meta-analysis as topic"[MeSH Terms] OR "meta-analysis"[All Fields]

**Table S3: Included and excluded systematic reviews and meta-analysis and its main results**

Cancer site, reference	Year	Cancer Site	Number of studies			Selection decision	Reason for exclusion	Random effect model performed in the original meta-analysis*		
			Cohort	Case-Control	Total			RR	95%CI	
<b>All cancer</b>										
Li Y et al. Int J Cancer. 2016;138(4):818-32.	2015	all cancer	32	0	32	included	-	0.80	0.76	0.85
Shi et al. Sci Rep. 2015;5:14901.	2015	all cancer	10	20	30	included	-	0.92	0.87	0.97
Li et al. Br J Sports Med. 2016;50(6):339-45.	2015	all cancer	36	0	36	excluded	fewer studies than Li et al	0.83	0.79	0.87
Liu et al. Br J Sports Med. 2016;50(6):372-8.	2016	all cancer	119	0	119	excluded	Study-specific data not reported	0.90	0.88	0.01
Schmid et al. Ann Oncol. 2015;26(2):272-8.	2015	all cancer	6	0	6	excluded	Exposure was not physical activity	NA	NA	NA
<b>Bladder</b>										
Keimling et al. Br J Cancer. 2014;110(7):1862-70.	2014	bladder	11	4	15	included	-	0.89	0.80	1.12
Al-Zalabani et al. Eur J Epidemiol. 2016;31(9):811-51.	2016	bladder	NA	NA	NA	excluded	overview of reviews	NP	NP	NP
Noguchi et al. Curr Urol Rep. 2015;16(10):74.	2015	bladder	8	3	11	excluded	fewer studies than Keimling et al.	NP	NP	NP
<b>Brain</b>										
Niedermaier et al. Neurology. 2015;85(15):1342-50.	2015	meningioma	3	1	4	included	--	0.77	0.55	1.08
Niedermaier et al. Neurology. 2015;85(15):1342-50.	2015	glioma	3	2	5	included	-	0.91	0.77	1.08
<b>Breast</b>										
Neilson et al. Menopause. 2017;24(3):322-44.	2017	breast	28	39	67	included	-	0.78#	0.69#	0.88#
Pizot et al. Eur J Cancer. 2016 Jan;52:138-54.	2016	breast	38	0	38	included	-	0.88	0.85	0.90
Friedenreich et al. Recent Results Cancer Res. 2011;188:125-39.	2011	breast	NA	NA	NA	excluded	Narrative review	NP	NP	NP
Gonçalves et al. J Phys Act Health. 2014;11(2):445-54.	2014	breast	7	14	21	excluded	fewer studies than Pizot	0.61	0.59	0.63
Kyu et al. BMJ. 2016;354:i3857. d	2016	breast	35	0	35	excluded	fewer studies than Pizot	0.86	0.83	0.90
Lagerros et al. Eur J Cancer Prev. 2004;13(1):5-12.	2004	breast	4	19	23	excluded	fewer studies than Pizot	0.77	0.52	1.12
Meneses-Echavez et al. J Clin Oncol 33, 2015 (suppl; abstr e22012)	2015	breast	NA	NA	NA	excluded	Cancer survivors studies	NP	NP	NP
Monninkhof et al. Epidemiology. 2007;18(1):137-57.	2007	breast	19	29	48	excluded	fewer studies than Neilson	NP	NP	NP
Wu et al. Breast Cancer Res Treat. 2013;137(3):869-82.	2013	breast	31	0	31	excluded	fewer studies than Pizot	0.87	0.83	0.92
Zhong et al. Eur J Epidemiol. 2014;29(6):391-404.	2014	breast	16	0	16	excluded	cancer survivors studies	NA	NA	NA
<b>Colon</b>										
Boyle et al. J Natl Cancer Inst. 2012;104(20):1548-61.	2012	proximal colon	12	9	21	included	-	0.78	0.72	0.86
Boyle et al. J Natl Cancer Inst. 2012;104(20):1548-61.	2012	distal colon	12	9	21	included	-	0.78	0.70	0.87
Wolin et al. Br J Cancer. 2009;100(4):611-6.	2009	colon	28	24	52	included	-	0.83	0.78	0.88
Bennett et al. Cancer Epidemiol. 2015;39(3):265-73.	2015	colon	1	0	1	excluded	fewer studies than Wolin	NP	NP	NP
Harris et al. Colorectal Dis. 2009;11(7):689-701.	2009	colon	14	0	14	excluded	fewer studies than Wolin	0.80**	0.67**	0.96**
Je et al. Int J Cancer. 2013;133(8):1905-13.	2013	colorectal	0	0	0	excluded	cancer survivors studies	NA	NA	NA
Kyu et al. BMJ. 2016;354:i3857. d	2016	colon	19	0	19	excluded	fewer studies than Wolin	0.80	0.70	0.90
Lopez et al. Curr Cancer Ther Rev. 2013;9(3):157 - 163	2013	colorectal	0	0	0	excluded	Narrative review	NP	NP	NP
Pham et al. Jpn J Clin Oncol. 2012;42(1):2-13.	2012	colorectal	2	6	8	excluded	fewer studies than Wolin	NP	NP	NP
Robsahm et al. Eur J Cancer Prev. 2013;22(6):492-505.	2013	proximal colon	12	0	12	excluded	fewer studies than Boyle	0.76	0.70	0.83
Robsahm et al. Eur J Cancer Prev. 2013;22(6):492-505.	2013	distal colon	12	0	12	excluded	fewer studies than Boyle	0.77	0.71	0.83

Samad et al. Colorectal Dis. 2005;7(3):204-13.	2005	colon	12	24	36	excluded	fewer studies than Wolin Narrative review	0.71	0.62	0.80
Sehdev et al. Curr Treat Options Oncol. 2011;16(9):43.	2015	colorectal	NA	NA	NA	excluded	-	NP	NP	NP
Spence et al. Scand J Med Sci Sports. 2009;19(6):764-81.	2009	colon	17	0	17	excluded	fewer studies than Wolin	NP	NP	NP
Spence et al. Scand J Med Sci Sports. 2009;19(6):764-81.	2009	proximal colon	11	0	11	excluded	fewer studies than Boyle	NP	NP	NP
Spence et al. Scand J Med Sci Sports. 2009;19(6):764-81.	2009	distal colon	11	0	11	excluded	fewer studies than Boyle	NP	NP	NP
<b>Endometrial</b>										
Schmid et al. Eur J Epidemiol. 2015;30(5):397-412.	2015	endometrial	18	15	33	included	-	0.84	0.78	0.91
Cust et al. Cancer Causes Control. 2007;18(3):243-58.	2007	endometrial	7	11	18	excluded	fewer studies than Schmid	NP	NP	NP
Keum et al. Int J Cancer. 2014;135(3):682-94.	2014	endometrial	10	10	20	excluded	fewer studies than Schmid	0.85	0.73	0.98
Leitzmann et al. Recent Results Cancer Res. 2011;186:43-71.	2011	endometrial	NA	NA	NA	excluded	Narrative review	NP	NP	NP
Moore et al. Br J Cancer. 2010;103(7):933-8.	2010	endometrial	11	0	11	excluded	fewer studies than Schmid	0.73##	0.58##	0.93##
Voskuil et al. Cancer Epidemiol Biomarkers Prev. 2007;16(4):639-48.	2007	endometrial	7	13	20	excluded	fewer studies than Schmid	0.77	0.70	0.85
<b>Esophageal</b>										
Behrens et al. Eur J Epidemiol. 2014;29(3):151-70.	2014	esophageal	5	7	12	included	-	0.79‡	0.60‡	1.02‡
Chen et al. PLoS One. 2014 Feb 6;9(2):e88082.	2014	esophageal	3	4	7	excluded	fewer studies than Behrens	0.78	0.66	0.92
Shephard RJ. Et al. Clin J Sport Med. 2016 Jul 15.	2016	esophageal	NA	NA	NA	excluded	Narrative review	NP	NP	NP
Singh et al. BMC Gastroenterol. 2014;14:101.	2014	esophageal	4	5	9	excluded	fewer studies than Behrens	0.84	0.71	1.00
<b>Gastric</b>										
Psaltopoulou et al. Clin J Sport Med. 2016;26(6):445-464.	2016	gastric	10	12	22	included	-	0.83	0.72	0.96
Abioye et al. Br J Sports Med. 2015;49(4):224-9.	2015	gastric	7	4	11	excluded	fewer studies than Psaltopoulou	0.81	0.68	0.96
Ayán et al. Eur Rev Aging and Physical Activity. 2013;10(1):7-13.	2013	gastric	NA	NA	NA	excluded	Narrative review	NP	NP	NP
Behrens et al. Eur J Epidemiol. 2014;29(3):151-70.	2014	gastric	9	11	20	excluded	fewer studies than Psaltopoulou	0.82	0.76	0.90
Chen et al. PLoS One. 2014;9(2):e88082.	2014	gastric	6	7	13	excluded	fewer studies than Psaltopoulou	0.87	0.73	1.04
Shephard et . Clin J Sport Med. 2016 Jul 15.	2016	gastric	NA	NA	NA	excluded	Narrative review	NP	NP	NP
Singh et al. Cancer Prev Res. 2014;7(1):12-22.	2014	gastric	7	9	16	excluded	fewer studies than Psaltopoulou	0.83	0.71	0.97
<b>Hematologic</b>										
Jochem et al. Cancer Epidemiol Biomarkers Prev. 2014;23(5):833-46.	2014	CLL/SLL	4	1	5	included	-	0.99	0.75	1.28
Jochem et al. Cancer Epidemiol Biomarkers Prev. 2014;23(5):833-46.	2014	DLBCL	5	1	6	included	-	0.95	0.80	1.14
Jochem et al. Cancer Epidemiol Biomarkers Prev. 2014;23(5):833-46.	2014	F	5	1	6	included	-	1.01	0.83	1.22
Jochem et al. Cancer Epidemiol Biomarkers Prev. 2014;23(5):833-46.	2014	Leukemia	6	2	8	included	-	0.97	0.84	1.14
Jochem et al. Cancer Epidemiol Biomarkers Prev. 2014;23(5):833-46.	2014	MM	7	0	7	included	-	0.86	0.68	1.09
Jochem et al. Cancer Epidemiol Biomarkers Prev. 2014;23(5):833-46.	2014	NHL	8	6	14	included	-	0.91	0.82	1.00
Jochem et al. Cancer Epidemiol Biomarkers Prev. 2014;23(5):833-46.	2014	HL	3	2	5	included	-	0.86	0.58	1.27
Sergentanis et al. Clin Lymphoma Myeloma Leuk. 2015;15(10):563-77.	2015	MM	0	0	0	excluded	overview of reviews	NP	NP	NP
Vermaete et al. Cancer Epidemiol Biomarkers Prev. 2013;22(7):1173-84.	2013	lymphoma	5	7	12	excluded	fewer studies than Jochem	1.02	0.88	1.19
<b>Kidney</b>										
Behrens et al. Br J Cancer. 2013;108(4):798-811.	2013	kidney	11	8	19	included	-	0.89	0.80	0.99
Dhote et al. Urol Clin North Am. 2004;31(2):237-47.	2004	kidney	NA	NA	NA	excluded	Narrative review	NP	NP	NP
<b>Liver</b>										
Berzigotti et al. Hepatology. 2016;63(3):1026-40.	2016	liver	NA	NA	NA	excluded	Narrative review	NP	NP	NP

**Lung**

Brenner et al. Lung Cancer. 2016;95:17-27.	2015	lung	21	6	27	included	-	0.79	0.70	0.89
Buffart et al. J Sci Med Sport. 2014;17(1):67-71.	2014	lung	7	1	8	excluded	fewer studies than Brenner	0.82	0.77	0.87
Schmid et al. Eur J Epidemiol. 2016;31(12):1173-1190.	2016	lung	19	6	25	excluded	fewer studies than Brenner	0.87	0.80	0.94
Sun et al. Asian Pac J Cancer Prev. 2012;13(7):3143-7.	2012	lung	14	0	14	excluded	fewer studies than Brenner	0.77	0.73	0.81
Tardon et al. Cancer Causes Control. 2005;16(4):389-97.	2005	lung	7	2	9	excluded	fewer studies than Brenner	0.70	0.62	0.79
Zhong et al. Clin J Sport Med. 2016;26(3):173-81.	2015	lung	12	6	18	excluded	fewer studies than Brenner	0.85	0.78	0.93

**Ovary**

Zhong et al. Tumour Biol. 2014;35(11):11065-73.	2014	ovarian	9	10	19	included	-	0.97	0.74	1.03
Canniooto et al. Gynecol Oncol. 2015;137(3):559-73.	2015	ovarian	NA	NA	NA	excluded	Narrative review	NP	NP	NP
Olsen et al. Cancer Epidemiol Biomarkers Prev. 2007;16(11):2321-30.	2007	ovarian	7	9	16	excluded	fewer studies than Zhong	0.81	0.57	1.23
Zhang et al. Chinese J Evidence-Based Medicine. 2014;14(10):1194-1200.	2014	ovarian	8	0	8	excluded	fewer studies than Zhong	1.35	1.08	0.74
Zhou et al. Asian Pac J Cancer Prev. 2014;15(13):5161-6.	2014	ovarian	3	3	6	excluded	fewer studies than Zhong	1.12	0.88	0.89

**Pancreatic cancer**

Behrens et al. Eur J Epidemiol. 2015;30(4):279-98.	2015	pancreas	22	8	30	included	-	0.93	0.88	0.98
Bao et al. Cancer Epidemiol Biomarkers Prev. 2008;17(10):2671-82.	2008	pancreas	16	3	19	excluded	fewer studies than Behrens	0.76	0.53	1.09
Barone et al. Arch Toxicol. 2016;90(11):2617-2642.	2016	pancreas	NA	NA	NA	excluded	Narrative review	NP	NP	NP
Farris et al. Cancer Epidemiol Biomarkers Prev. 2015;24(10):1462-73.	2015	pancreas	21	6	27	excluded	fewer studies than Behrens	0.96	0.91	1.02
Maisonneuve et al. Int J Epidemiol. 2015;44(1):186-98.	2015	pancreas	NA	NA	NA	excluded	overview of reviews	NP	NP	NP
O'Rorke et al. Int J Cancer. 2010;126(12):2957-68.	2010	pancreas	22	6	28	excluded	fewer studies than Behrens	0.72	0.52	0.99

**Prostate**

Liu et al. Eur Urol. 2011;60(5):1029-44.	2011	prostate	19	24	43	excluded	Study-specific data not reported	0.94 <sup>‡‡</sup>	0.91 <sup>‡‡</sup>	0.98 <sup>‡‡</sup>
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**Rectum**

Robsahm et al. Eur J Cancer Prev. 2013;22(6):492-505.	2013	rectum	11	0	11	included	-	0.98	0.88	1.08
Samad et al. Colorectal Dis. 2005;7(3):204-13.	2005	rectum	7	6	13	included	-	0.88 <sup>§§</sup>	0.63 <sup>§§</sup>	1.23 <sup>§§</sup>
Harriss et al. Colorectal Dis. 2009;11(7):689-701.	2009	rectum	8	0	8	excluded	fewer studies than Robsahm	1.02 <sup>\$</sup>	0.83 <sup>\$</sup>	1.27 <sup>\$</sup>
Spence et al. Scand J Med Sci Sports. 2009;19(6):764-81.	2009	rectum	9	0	9	excluded	fewer studies than Robsahm	NP	NP	NP

**Thyroid**

Schmid et al. Eur J Epidemiol. 2013;28(12):945-58.	2013	thyroid	4	3	7	included	-	1.28	1.01	1.64
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**Other reviews**

Desnoyers et al. Rev Med Interne. 2016;37(6):399-405.	2016	non-specific	NA	NA	NA	excluded	Narrative review	NP	NP	NP
Culos-Reed et al. Pediatric Exercise Science. 2002;14(3):248-58	2002	non-specific	NA	NA	NA	excluded	Narrative review	NP	NP	NP
Scientific Program Committee. Cancer. 2002;95(5):1134-43.	2002	non-specific	NA	NA	NA	excluded	Narrative review	NP	NP	NP

NA , not applicable; NP, not performed; CLL/SLL, chronic lymphocytic lymphoma/small lymphocytic lymphoma; DLBCL, diffuse large B-cell lymphoma; FL, follicular lymphoma; HL, Hodgkin lymphoma; NHL, non-Hodgkin lymphoma;

MM,multip le myeloma; MPA

\* We standardized the least active category as reference group across meta-analyses. RR and 95% CI were gathered from cohorts only analyses.

# RR and 95% CI for pre-menopause population in case-control studies; for post-menopause RR was 0.72 (95% CI 0.67-0.77); We included Neilson et al. meta-analysis (Neilson et al., 2017) to gather data from case-control studies only.

\*\*Result for men including cohort and case-control studies;

##RR for recreational physical activity in cohort studies;

<sup>†</sup>RR and 95%CI based on case-control and cohort studies

<sup>‡</sup>RR for total physical activity in cohort studies;

<sup>§</sup>Result for men including cohort and case-control studies;

<sup>¶</sup>Result for men including case-control studies; We included Samad et al. meta-analysis to gather data from case-control studies only.

## **Reference list of included systematic reviews.**

1. Behrens G, Leitzmann MF. The association between physical activity and renal cancer: systematic review and meta-analysis. *Br J Cancer*. 2013;108(4):798-811.
2. Behrens G, Jochem C, Keimling M, Ricci C, Schmid D, Leitzmann MF. The association between physical activity and gastroesophageal cancer: systematic review and meta-analysis. *Eur J Epidemiol*. 2014;29(3):151-70.
3. Behrens G, Jochem C, Schmid D, Keimling M, Ricci C, Leitzmann MF. Physical activity and risk of pancreatic cancer: a systematic review and meta-analysis. *Eur J Epidemiol*. 2015;30(4):279-98.
4. Boyle T, Keegel T, Bull F, Heyworth J, Fritschi L. Physical activity and risks of proximal and distal colon cancers: a systematic review and meta-analysis. *J Natl Cancer Inst*. 2012;104(20):1548-61.
5. Brenner DR, Yannitsos DH, Farris MS, Johansson M, Friedenreich CM. Leisure-time physical activity and lung cancer risk: A systematic review and meta-analysis. *Lung Cancer*. 2016;95:17-27.
6. Jochem C, Leitzmann MF, Keimling M, Schmid D, Behrens G. Physical activity in relation to risk of hematologic cancers: a systematic review and meta-analysis. *Cancer Epidemiol Biomarkers Prev*. 2014;23(5):833-46.
7. Keimling M, Behrens G, Schmid D, Jochem C, Leitzmann MF. The association between physical activity and bladder cancer: systematic review and meta-analysis. *Br J Cancer*. 2014;110(7):1862-70.
8. Li Y, Gu M, Jing F, Cai S, Bao C, Wang J, Jin M, Chen K. Association between physical activity and all cancer mortality: Dose-response meta-analysis of cohort studies. *Int J Cancer*. 2016 Feb 15;138(4):818-32.
9. Neilson HK, Farris MS, Stone CR, Vaska MM, Brenner DR, Friedenreich CM. Moderate-vigorous recreational physical activity and breast cancer risk, stratified by menopause status: a systematic review and meta-analysis. *Menopause*. 2016 Oct 24. [Epub ahead of print]
10. Niedermaier T, Behrens G, Schmid D, Schlecht I, Fischer B, Leitzmann MF. Body mass index, physical activity, and risk of adult meningioma and glioma: A meta-analysis. *Neurology*. 2015;85(15):1342-50.
11. Pizot C, Boniol M, Mullie P, Koechlin A, Boniol M, Boyle P, Autier P. Physical activity, hormone replacement therapy and breast cancer risk: A meta-analysis of prospective studies. *Eur J Cancer*. 2016;52:138-54.
12. Psaltopoulou T, Ntanasis-Stathopoulos I, Tzanninis IG, Kantzanou M, Georgiadou D, Sergentanis TN. Physical Activity and Gastric Cancer Risk: A Systematic Review and Meta-Analysis. *Clin J Sport Med*. 2016;26(6):445-464.
13. Robsahm TE, Aagnes B, Hjartåker A, Langseth H, Bray FI, Larsen IK. Body mass index, physical activity, and colorectal cancer by anatomical subsites: a systematic review and meta-analysis of cohort studies. *Eur J Cancer Prev*. 2013;22(6):492-505.

14. Samad AK, Taylor RS, Marshall T, Chapman MA. A meta-analysis of the association of physical activity with reduced risk of colorectal cancer. *Colorectal Dis.* 2005;7(3):204-13.
15. Schmid D, Behrens G, Jochem C, Keimling M, Leitzmann M. Physical activity, diabetes, and risk of thyroid cancer: a systematic review and meta-analysis. *Eur J Epidemiol.* 2013;28(12):945-58.
16. Schmid D, Behrens G, Keimling M, Jochem C, Ricci C, Leitzmann M. A systematic review and meta-analysis of physical activity and endometrial cancer risk. *Eur J Epidemiol.* 2015;30(5):397-412.
17. Shi Y, Li T, Wang Y, Zhou L, Qin Q, Yin J, Wei S, Liu L, Nie S. Household physical activity and cancer risk: a systematic review and dose-response meta-analysis of epidemiological studies. *Sci Rep.* 2015;5:14901.
18. Wolin KY, Yan Y, Colditz GA, Lee IM. Physical activity and colon cancer prevention: a meta-analysis. *Br J Cancer.* 2009;100(4):611-6.
19. Zhong S, Chen L, Lv M, Ma T, Zhang X, Zhao J. Nonoccupational physical activity and risk of ovarian cancer: a meta-analysis. *Tumour Biol.* 2014;35(11):11065-73.

**Table S4 - Assessing the Methodological Quality of Systematic Reviews – AMSTAR**

References	Cancer Site	AMSTAR Items*										
		1	2**	3	4	5	6	7	8	9	10	11
Behrens et al. (1)	Kidney	ca	ca	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No
Behrens et al. (2)	Esophageal	ca	ca	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No
Behrens et al. (3)	Pancreas	ca	ca	No	No	Yes	Yes	Yes	No	Yes	Yes	No
Boyle et al. (4)	Proximal and Distal Colon	ca	Yes	No	No	No	Yes	Yes	No	Yes	Yes	No
Brenner et al. (5)	Lung	ca	ca	No	No	No	Yes	Yes	Yes	Yes	Yes	No
Jochem et al. (6)	Hematologic***	ca	ca	No	No	No	Yes	Yes	Yes	Yes	Yes	No
Keimling et al. (7)	Bladder	ca	ca	Yes	No	No	Yes	No	No	Yes	Yes	No
Li et al. (8)	All cancer mortality	ca	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No
Neilson et al. (9)	Breast	Yes	ca	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No
Niedermaier et al. (10)	Meningioma and Glioma	ca	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No
Pizot et al. (11)	Breast	ca	No	Yes	No	No	Yes	No	No	Yes	Yes	No
Psaltopoulou et al. (12)	Gastric	ca	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
Robsahm et al. (13)	Rectum	ca	ca	No	No	No	Yes	Yes	Yes	Yes	Yes	No
Samad et al. (14)	Rectum	ca	No	Yes	No	Yes	Yes	Yes	No	Yes	No	No
Schmid et al. (15)	Thyroid	ca	ca	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No
Schmid et al. (16)	Endometrial	ca	ca	Yes	ca	Yes	Yes	Yes	Yes	Yes	Yes	No
Shi et al. (17)	Multiple sites	ca	ca	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No
Wolin et al. (18)	Colon	ca	No	No	No	No	No	Yes	Yes	Yes	Yes	No
Zhong et al. (19)	Ovary	ca	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	No

\* 1. ‘a priori’ design provided; 2. duplicate study selection/data extraction; 3. comprehensive literature search; 4. status of publication as inclusion criteria (i.e grey or unpublished literature); 5. list of studies included/excluded provided; 6. characteristics of included studies documented; 7. scientific quality assessed and documented; 8. appropriate formulation of conclusions; 9. appropriate methods of combining studies; 10. assessment of publication bias; and 11. conflict of interest statement. \*\* applies to studies that did not clearly report that both selection (title and abstract AND full-text) of studies and data extraction were performed by two reviewers independently. \*\*\*Included Non-Hodgkin and Hodgkin lymphoma, Chronic lymphocytic lymphoma/small lymphocytic lymphoma, Diffuse large B-cell lymphoma, Follicular lymphoma, Leukemia, and Multiple myeloma;

## We assessed the methodological quality of the systematic reviews using the AMSTAR tool and gathering data on statistical analyses considered to evaluate the robustness of evidence and state conclusions. AMSTAR contains 11-items to assess the methodological quality of systematic reviews (Table S4 in the appendix), which relates to the quality and transparency of the report, the search strategy, selection of studies and data extraction; the assessment and documentation of the methodological quality of the original studies; the appropriateness of the analysis performed and conclusions formulated; the assessment of publication bias; and the acknowledgement of any potential conflict of interest for the systematic review as well as for the included studies. The assessment of the methodological quality was performed by two researchers independently (LFMR and JPRL), and discrepancies were solved by a third researcher (THS).

yes	
no	
ca	can not answer

**1. Was an 'a priori' design provided?**

The research question and inclusion criteria should be established before the conduct of the review

**2. Was there duplicate study selection and data extraction?**

There should be at least two independent data extractors and a consensus procedure for disagreements should be in place.

**3. Was a comprehensive literature search performed?**

At least two electronic sources should be searched. The report must include years and databases used (e.g., Central, EMBASE, and MEDLINE). Key words and/or MESH terms must be stated and where feasible the search strategy should be provided. All searches should be supplemented by consulting current contents, reviews, textbooks, specialized registers, or experts in the particular field of study, and by reviewing the references in the studies found.

Note: If at least 2 sources + one supplementary strategy used, select "yes" (Cochrane register/Central counts as 2 sources; a grey literature search counts as supplementary).

**4. Was the status of publication (i.e. grey literature) used as an inclusion criterion?**

The authors should state that they searched for reports regardless of their publication type. The authors should state whether or not they excluded any reports (from the systematic review), based on their publication status, language etc.

Note: If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." SINGLE database, dissertations, conference proceedings, and trial registries are all considered grey for this purpose. If searching a source that contains both grey and non-grey, must specify that they were searching for grey/unpublished lit.

**5. Was a list of studies (included and excluded) provided?**

A list of included and excluded studies should be provided.

Note: Acceptable if the excluded studies are referenced. If there is an electronic link to the list but the link is dead, select "no."

**6. Were the characteristics of the included studies provided?**

In an aggregated form such as a table, data from the original studies should be provided on the participants, interventions and outcomes. The ranges of characteristics in all the studies analyzed e.g., age, race, sex, relevant socioeconomic data, disease status, duration, severity, or other diseases should be reported.

Note: Acceptable if not in table format as long as they are described as above.

**7. Was the scientific quality of the included studies assessed and documented?**

'A priori' methods of assessment should be provided (e.g., for effectiveness studies if the author(s) chose to include only randomized, double-blind, placebo controlled studies, or allocation concealment as inclusion criteria); for other types of studies alternative items will be relevant.

Note: Can include use of a quality scoring tool or checklist, e.g., Jadad scale, risk of bias, sensitivity analysis, etc., or a description of quality items, with some kind of result for EACH study ("low" or "high" is fine, as long as it is clear which studies scored "low" and which scored "high"; a summary score/range for all studies is not acceptable).

**8. Was the scientific quality of the included studies used appropriately in formulating conclusions?**

The results of the methodological rigor and scientific quality should be considered in the analysis and the conclusions of the review, and explicitly stated in formulating recommendations.

Note: Might say something such as "the results should be interpreted with caution due to poor quality of included studies." Cannot score "yes" for this question if scored "no" for question 7.

**9. Were the methods used to combine the findings of studies appropriate?**

For the pooled results, a test should be done to ensure the studies were combinable, to assess their homogeneity (i.e., Chi-squared test for homogeneity, I<sup>2</sup>). If heterogeneity exists a random effects model should be used and/or the clinical appropriateness of combining should be taken into consideration (i.e., is it sensible to combine?).

Note: Indicate "yes" if they mention or describe heterogeneity, i.e., if they explain that they cannot pool because of heterogeneity/variability between interventions.

**10. Was the likelihood of publication bias assessed?**

An assessment of publication bias should include a combination of graphical aids (e.g., funnel plot, other available tests) and/or statistical tests (e.g., Egger regression test, Hedges-Olken).

Note: If no test values or funnel plot included, score “no”. Score “yes” if mentions that publication bias could not be assessed because there were fewer than 10 included studies.

**11. Was the conflict of interest included?**

Potential sources of support should be clearly acknowledged in both the systematic review and the included studies.

Note: To get a “yes,” must indicate source of funding or support for the systematic review AND for each of the included studies

**Table S5: Robustness of evidence grading for meta-analyses of both cohort and case-control studies associating any physical activity and risk of developing or dying from cancer**

Cancer	PA domain	Number of Studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P <sup>†</sup>	Excess significance	
										O/E <sup>‡,##</sup>	P-value <sup>‡</sup>
<b>Associations supported by highly suggestive evidence</b>											
Endometrial, inc.	T, R, O, Other (NR)	33	19558/2219152	0.76 (0.67,0.85)	0.79 (0.74,0.85)	1.5E-10	0.66, 0.96	21 (0, 48)	0.061	9/20.28	NP
All, mort.	T, R, O, Other (multiple domains <sup>§</sup> )	25	40469/2530072	0.91 (0.84,0.99)	0.79 (0.75,0.85)	5.0E-13	0.64, 0.99	53 (18, 69)	0.008	17/9.95	0.007
<b>Associations supported by suggestive evidence</b>											
Colon, inc. or mort.	T, R (leisure), O, Other (C, NR)	53	290641/4027730	0.99 (0.96,1.01)	0.75 (0.70,0.80)	8.3E-18	0.52, 1.09	81 (75, 84)	4.0E-05	26/3.80	1.9E-16
Lung, inc.	R (leisure)	27	21798/2206595	1.00 (0.93,1.09)	0.78 (0.69,0.86)	5.0E-06	0.45, 1.32	89 (85, 91)	0.203	12/1.35	2.1E-09
<b>Associations supported by weak evidence</b>											
Gastric, inc.	T, R, O	16	10507/1502449	0.91 (0.85,0.97)	0.82 (0.73,0.93)	0.001	0.57, 1.18	61 (24, 76)	0.526	8/3.50	0.012
Gastric, mort.	R	2	671/20604	0.69 (0.57,0.83)	0.68 (0.57,0.82)	3.1E-05	NA	0 (NA)	NA	1/1.54	NP
Pancreas, inc.	T, R, O	27	9809/4568663	1.00 (0.91,1.1)	0.88 (0.81,0.95)	0.002	0.68, 1.14	40 (0, 61)	0.016	2/1.35	0.394
Kidney, inc.	T, R, O	17	10687/2193033	0.77 (0.64,0.92)	0.87 (0.79,0.97)	0.013	0.65, 1.18	40 (0, 65)	0.993	4/11.04	NP
Non-Hodgkin lymphoma, inc. or mort.	T, R, O	14	10310/1361370	0.86 (0.74,1.02)	0.92 (0.84,1.00)	0.045	0.78, 1.09	18 (0, 56)	0.972	1/6.43	NP
Bladder, inc.	R, O	15	27784/5402369	0.74 (0.69,0.78)	0.85 (0.74,0.98)	0.026	0.51, 1.41	80 (66, 86)	0.200	3/10.17	NP
Multiple sites, inc. or mort.	H	31	33949/2736341	0.88 (0.81,0.95)	0.86 (0.78,0.96)	0.006	0.51, 1.45	78 (69, 84)	0.373	11/11.76	NP
Glioma, inc. or mort.	T, R	5	1729/1876252	0.76 (0.63,0.91)	0.85 (0.76,0.96)	0.011	0.7, 1.04	0 (0, 64)	0.189	1/3.36	NP
Meningioma, inc. or mort.	T, R	4	775/1612546	0.73 (0.56,0.97)	0.73 (0.61,0.88)	6.1E-04	0.49, 1.09	0 (0, 68)	0.885	2/2.39	NP
<b>Associations were not statistically significant</b>											
Esophageal, inc.	T, R, O	12	3038/1867135	0.84 (0.66,1.06)	0.93 (0.67,1.27)	0.629	0.28, 3.03	85 (75, 90)	0.546	4/3.45	0.753
Pancreas, mort.	T, R	5	930/295187	0.97 (0.72,1.32)	1.03 (0.84,1.25)	0.782	0.74, 1.43	0 (0, 64)	0.610	0/0.27	NP
Kidney, mort.	T, R	2	69/136180	0.54 (0.25,1.18)	0.68 (0.38,1.22)	0.190	NA	0 (NA)	NA	0/1.03	NP
Rectum, inc.	R, O, Other (lifetime)	11	33504/2370439	0.93 (0.83,1.05)	1.00 (0.88,1.12)	0.939	0.76, 1.30	29 (0, 64)	0.019	1/2.09	NP
Rectum, inc. or mort.	R (leisure), O	13	6116/65484	0.72 (0.62,0.85)	0.87 (0.74,1.03)	0.103	0.52, 1.47	59 (10, 76)	0.714	3/7.94	
Ovary, inc.	NR	21	9266/732780	1.18 (0.94,1.47)	0.90 (0.8,1.01)	0.068	0.61, 1.33	49 (2, 68)	0.698	5/7.87	NP
Hodgkin lymphoma, inc. or mort.	T, R, O	5	352/525999	0.56 (0.37,0.86)	0.85 (0.56,1.27)	0.408	0.28, 2.56	38 (0, 76)	0.080	1/2.92	NP
Diffuse large B-cell lymphoma, inc. or mort.	T, R	6	1480/1236881	0.89 (0.63,1.27)	0.96 (0.79,1.16)	0.672	0.66, 1.39	14 (0, 66)	0.001	1/0.95	1.000
Follicular lymphoma, inc. or mort.	T, R	6	1179/1236881	0.82 (0.54,1.25)	1.01 (0.83,1.22)	0.946	0.76, 1.33	0 (0, 61)	0.076	0/1.98	NP
Leukemia, inc. or mort.	T, R, O	8	1736/1116709	1.15 (0.88,1.47)	0.98 (0.85,1.12)	0.749	0.75, 1.27	14 (0, 62)	0.068	1/1.49	NP
Chronic/small lymphocytic lymphoma, inc. or mort.	T, R	5	1403/893125	0.85 (0.61,1.18)	1.01 (0.83,1.22)	0.943	0.66, 1.54	16 (0, 69)	0.323	0/1.54	NP
Multiple myeloma, inc. or mort.	T, R, O	7	1362/1261328	1.19 (0.93,1.52)	0.84 (0.64,1.11)	0.216	0.40, 1.79	52 (0, 78)	0.198	1/1.80	NP
Thyroid, inc.	T, R, O	11	2251/939305	1.11 (0.91,1.35)	1.04 (0.8,1.35)	0.768	0.45, 2.44	73 (45, 84)	0.653	4/1.30	0.033
Gastric, inc. or mort.	T, R	4	2176/97587	0.93 (0.77,1.14)	0.92 (0.76,1.1)	0.349	0.61, 1.37	0 (0, 68)	0.324	0/0.61	NP

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NR, not reported; RR, relative risk; T, total; R, recreational; O, occupational; C, commuting; H, household.

\*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\* Random effects refer to summary risk ratio (95% CI) using the random-effects model.

#P-value of the summary random effects estimate.

<sup>†</sup> P-value from the Egger's regression asymmetry test.

<sup>‡</sup> Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

<sup>##</sup> Observed/Expected number of statistically significant studies

<sup>‡</sup> P-value of the excess statistical significance test.

<sup>§</sup> Multiple domains include a combination of at least two, but not all, of the following physical activity domains: occupational, recreational, household, and commuting.

**Table S6: Robustness of evidence grading for meta-analyses of cohort and case-control studies associating recreational physical activity and risk of developing or dying from cancer.**

Cancer	PA domain	Number of Studies	Number of cases/Sample size	Largest study, RR (95% CI)*	Random Effects, RR (95% CI)**		95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P <sup>†</sup>	Excess significance	
					RR (95% CI)	P#				O/E <sup>‡,##</sup>	P-value <sup>‡</sup>
<b>Associations supported by highly suggestive evidence</b>											
Colon, inc. or mort.	R	17	10221/1004937	0.84 (0.75, 0.94)	0.74 (0.67, 0.81)	3.68E-10	0.56, 0.95	36 (0, 63)	0.022	10/7.82	0.335
<b>Associations supported by suggestive evidence</b>											
Lung, inc	R	27	21798/2206595	1.00 (0.93, 1.09)	0.78 (0.69, 0.86)	5.03E-06	0.45, 1.32	89 (85, 91)	0.203	12/1.35	2.09E-09
Endometrial, inc.	R	15	7317/296649	0.84 (0.69, 1.02)	0.83 (0.76, 0.91)	5.46E-05	0.72, 0.95	6 (0, 49)	0.137	2/6.44	
All, mort	R	10	21657/691126	0.91 (0.83, 1.00)	0.81 (0.74, 0.90)	6.07E-05	0.62, 1.08	56 (0, 77)	0.113	6/4.38	0.350
Esophageal cancer, subsite unspecified, inc. or mort.	R	7	1539/1845066	0.84 (0.66, 1.06)	0.78 (0.68, 0.88)	2.47E-04	0.65, 0.93	0 (0, 58)	0.547	2/1.95	1
<b>Associations supported by weak evidence</b>											
Gastric, mort.	R	2	671/20604	0.69 (0.57, 0.83)	0.68 (0.57, 0.82)	3.12E-05	NA	0 (NA)	NA	1/1.54	NP
Meningioma, inc. or mort.	R	3	595/1231771	0.73 (0.56, 0.97)	0.72 (0.59, 0.87)	7.39E-04	0.21, 2.50	0 (0, 73)	0.452	2/1.74	1
Hodgkin lymphoma, inc. or mort.	R	3	293/57872	0.56 (0.37, 0.86)	0.66 (0.48, 0.91)	0.011	0.08, 5.26	0 (0, 73)	0.114	1/2.17	NP
Pancreas, inc.	R	20	7309/3872306	1.00 (0.91, 1.10)	0.89 (0.81, 0.98)	0.018	0.66, 1.20	48 (0, 68)	0.096	2/1.00	0.264
Glioma, inc. or mort.	R	4	1413/1495477	0.76 (0.63, 0.91)	0.85 (0.74, 0.99)	0.037	0.56, 1.32	18 (0, 73)	0.336	1/2.59	NP
Bladder, inc.	R	10	4681/1169966	0.86 (0.73, 1.01)	0.80 (0.64, 0.99)	0.039	0.39, 1.64	79 (58, 87)	0.804	2/3.34	NP
<b>Associations were not statistically significant</b>											
Kidney, inc.	R	14	6600/1087399	0.77 (0.64, 0.92)	0.88 (0.77, 1.02)	0.095	0.58, 1.35	52 (0, 72)	0.924	4/8.41	NP
Non-Hodgkin lymphoma, inc. or mort.	R	10	7337/871386	0.86 (0.74, 1.02)	0.91 (0.81, 1.02)	0.121	0.68, 1.22	37 (0, 69)	0.672	1/4.46	NP
Multiple myeloma, inc. or mort.	R	5	1190/915303	1.19 (0.93, 1.52)	0.82 (0.60, 1.11)	0.202	0.30, 2.22	62 (0, 84)	0.043	1/1.52	NP
Leukemia, inc. or mort.	R	4	1133/589537	1.15 (0.88, 1.47)	1.08 (0.91, 1.28)	0.371	0.75, 1.56	0 (0, 68)	0.052	0/0.89	NP
Gastric, inc.	R	13	7927/1800356	0.91 (0.85, 0.97)	0.94 (0.81, 1.11)	0.486	0.57, 1.56	66 (29, 80)	0.776	6/2.66	0.033
Diffuse large B-cell lymphoma, inc. or mort.	R	4	1043/427267	0.89 (0.63, 1.27)	0.93 (0.76, 1.15)	0.528	0.59, 1.47	0 (0, 68)	0.148	0/0.65	NP
Chronic/small lymphocytic lymphoma, inc. or mort.	R	4	1169/427267	0.85 (0.61, 1.18)	1.05 (0.85, 1.32)	0.627	0.57, 1.96	17 (0, 73)	0.104	0/1.26	NP
Thyroid, papillary, inc. or mort.	R	4	1024/306868	0.76 (0.59, 0.98)	1.09 (0.74, 1.59)	0.667	0.23, 5.26	68 (0, 87)	0.069	2/2.28	NP
Rectal, inc. or mort.	R	4	726/4342	0.61 (0.41, 0.91)	0.90 (0.55, 1.47)	0.676	0.12, 6.67	69 (0, 87)	0.833	1/3.42	NP
Gastric, inc.	R	2	81/7698	1.05 (0.5, 2.22)	0.93 (0.48, 1.82)	0.840	NA	0 (NA)	NA	0/0.11	NP
Rectal, inc.	R	7	3007/1293629	0.81 (0.67, 0.98)	0.98 (0.79, 1.22)	0.861	0.54, 1.79	58 (0, 80)	0.493	1/3.81	NP

Follicular lymphoma, inc. or mort.	R	4	828/427267	0.82 (0.54, 1.25)	0.98 (0.78, 1.23)	0.879	0.60, 1.61	0 (0, 68)	0.796	0/1.36	NP
Pancreas, mort.	R	4	879/264361	0.97 (0.72, 1.32)	0.99 (0.81, 1.22)	0.960	0.63, 1.56	0 (0, 68)	0.866	0/0.22	NP

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies is less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; RR, relative risk; R, recreational.

\*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\*Random effects refer to summary risk ratio (95% CI) using the random-effects model.

#P-value of the summary random effects estimate.

†P-value from the Egger's regression asymmetry test.

‡Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

##Observed/Expected number of statistically significant studies

§P-value of the excess statistical significance test.

§Multiple domains include a combination of at least two, but not all, of the following physical activity domains: occupational, recreational, household, and commuting.

**Table S7: Robustness of evidence grading for meta-analyses of cohort studies associating any physical activity and risk of developing or dying from cancer**

Cancer	PA domain	Number of Studies	Number of cases/Sample size	Largest study, RR (95% CI)*	Random Effects, RR (95% CI)**	Random Effects, P#	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P†	Excess significance	
										Credibility ceiling value (%) by which P>0.05	O/E‡## P-value‡
<b>Associations supported by highly suggestive evidence</b>											
Breast, inc.	O and non-O T, R, O, Other (multiple domains§)	38	116304/4106731	0.91 (0.87, 0.94)	0.87 (0.84, 0.90)	2.1E-15	0.78, 0.97	29 (0, 52)	0.032	29	14/15.85 NP
All, mort.		25	40469/2530072	0.91 (0.84, 0.99)	0.79 (0.75, 0.85)	5.0E-13	0.64, 0.99	53 (18, 69)	0.008	24	17/9.95 0.007
<b>Associations supported by suggestive evidence</b>											
Colon, inc. or mort.	T, R (leisure), O	28	246123/3869536	0.99 (0.96, 1.01)	0.81 (0.75, 0.88)	1.7E-07	0.59, 1.12	75 (63, 82)	4.8E-04	16	11/2.31 6.0E-06
Lung, inc.	R (leisure)	20	15777/2138946	1.00 (0.93, 1.09)	0.79 (0.70, 0.90)	2.5E-04	0.47, 1.35	90 (86, 92)	0.287	9	8/1.00 2.9E-06
Endometrial, inc.	T, R, O, Other (NR)	18	13583/2174565	0.76 (0.67, 0.85)	0.83 (0.76, 0.92)	1.2E-04	0.66, 1.05	32 (0, 61)	0.399	17	4/11.34 NP
<b>Associations supported by weak evidence</b>											
Pancreas, inc.	T, R, O	19	7209/4558090	1.00 (0.91, 1.10)	0.93 (0.87, 0.99)	0.021	0.83, 1.04	10 (0, 48)	0.039	7	0/0.95 NP
Multiple sites, inc. or mort.	H	11	16969/2700104	0.88 (0.81, 0.95)	0.93 (0.87, 0.99)	0.029	0.84, 1.03	7 (0, 54)	0.626	1	2/5.59 NP
Meningioma, inc. or mort.	T, R	3	680/1612020	0.73 (0.56, 0.97)	0.71 (0.58, 0.88)	0.002	0.18, 2.86	0 (0, 73)	0.948	8	2/2.05 NP
<b>Associations were not statistically significant</b>											
Esophageal, inc.	T, R	4	896/1840876	0.84 (0.66, 1.06)	0.85 (0.71, 1.01)	0.064	0.57, 1.25	0 (0, 68)	0.431	0	0/1.19 NP
Gastric, inc.	T, R	6	5295/1436750	0.91 (0.85, 0.97)	0.83 (0.67, 1.01)	0.062	0.45, 1.49	67 (0, 84)	0.452	0	4/1.66 0.053
Pancreas, mort.	T, R	5	930/295187	0.97 (0.72, 1.32)	1.03 (0.84, 1.25)	0.782	0.74, 1.43	0 (0, 64)	0.610	0	0/0.27 NP
Kidney, inc.	T, R, O	9	6035/2158309	0.77 (0.64, 0.92)	0.88 (0.76, 1.00)	0.056	0.63, 1.2	35 (0, 69)	0.714	0	2/5.63 NP
Kidney, mort.	T, R	2	69/136180	0.54 (0.25, 1.18)	0.68 (0.38, 1.22)	0.190	NA	0 (NA)	NA	0	0/1.03 NP
Rectum, inc.	R, O, Other (lifetime)	11	33504/2370439	0.93 (0.83, 1.05)	1.00 (0.88, 1.12)	0.939	0.76, 1.3	29 (0, 64)	0.019	0	1/2.09 NP
Ovary, inc.	NR	9	2467/705874	1.18 (0.94, 1.47)	0.97 (0.74, 1.28)	0.842	0.42, 2.27	69 (22, 83)	0.296	0	3/2.84 1.000
Non-Hodgkin lymphoma, inc. or mort.	T, R, O	8	6106/1332416	0.86 (0.74, 1.02)	0.93 (0.85, 1.02)	0.120	0.83, 1.04	0 (0, 56)	0.771	0	0/4.06 NP
Hodgkin lymphoma, inc. or mort.	T, R, O	3	111/524810	0.73 (0.38, 1.39)	1.05 (0.62, 1.79)	0.838	0.01, 100	17 (0, 77)	0.634	0	0/0.56 NP
Diffuse large B-cell lymphoma, inc. or mort.	T, R	5	1313/1235532	0.89 (0.63, 1.27)	0.96 (0.76, 1.22)	0.751	0.52, 1.79	30 (0, 74)	0.006	0	1/0.83 1.000
Follicular lymphoma, inc. or mort.	T, R	5	957/1235532	0.82 (0.54, 1.25)	1.04 (0.81, 1.33)	0.771	0.61, 1.75	15 (0, 69)	0.136	0	0/1.65 NP
Leukemia, inc. or mort.	T, R, O	6	707/1095803	1.09 (0.84, 1.41)	0.93 (0.76, 1.12)	0.435	0.61, 1.39	21 (0, 69)	0.199	0	1/0.49 0.399
Chronic/small lymphocytic lymphoma, inc. or mort.	T, R	4	1125/891776	0.85 (0.61, 1.18)	0.96 (0.76, 1.22)	0.749	0.49, 1.89	20 (0, 74)	0.309	0	0/1.28 NP
Multiple myeloma, inc. or mort.	T, R, O	7	1362/1261328	1.19 (0.93, 1.52)	0.84 (0.64, 1.11)	0.216	0.40, 1.79	52 (0, 78)	0.198	0	1/1.80 NP
Bladder, inc.	R, O	11	25174/5382075	0.74 (0.69, 0.78)	0.91 (0.79, 1.05)	0.188	0.58, 1.41	75 (48, 85)	0.031	0	2/6.72 NP
Thyroid, inc.	T, R, O	8	1393/937173	1.11 (0.91, 1.35)	1.28 (0.99, 1.64)	0.056	0.68, 2.38	47 (0, 75)	0.429	0	2/0.95 0.246
Glioma, inc. or mort.	T, R	3	1194/1874792	0.91 (0.75, 1.12)	0.91 (0.78, 1.06)	0.245	0.32, 2.56	0 (0, 73)	0.904	0	0/0.54 NP
Gastric, inc. or mort.	T, R	3	2154/974777	0.93 (0.77, 1.14)	0.83 (0.53, 1.28)	0.395	0.02, 50.0	14 (0, 76)	0.246	0	0/0.56 NP

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NR, not reported; RR, relative risk; T, total; R, recreational; O, occupational; C, commuting; H, household.

\*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\* Random effects refer to summary risk ratio (95% CI) using the random-effects model.

#P-value of the summary random effects estimate.

† P-value from the Egger's regression asymmetry test.

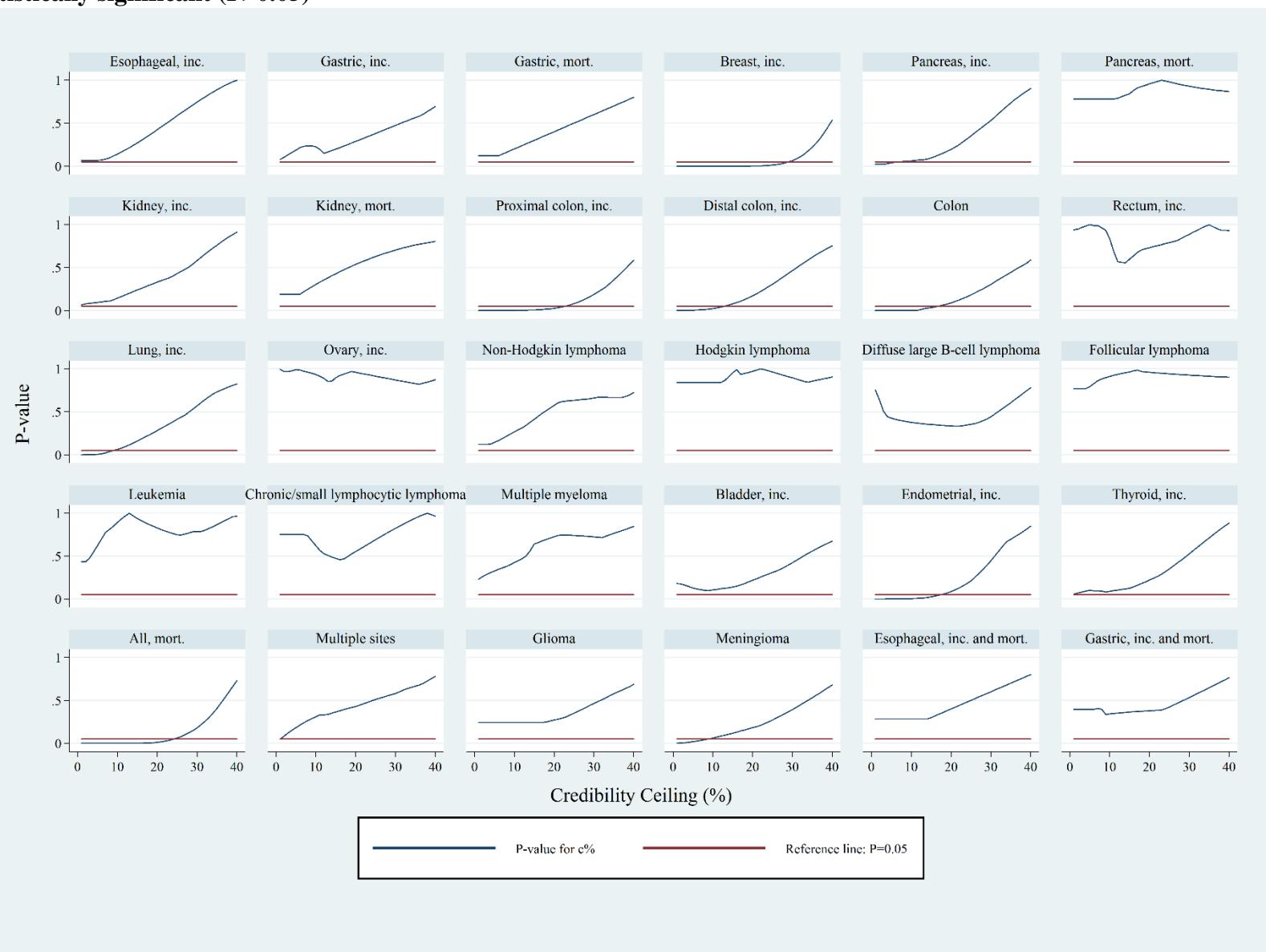
‡ Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

\* P-value of the excess statistical significance test.

§ Multiple domains include a combination of at least two, but not all, of the following physical activity domains: occupational, recreational, household, and commuting.

**Figure S1 – Credibility ceiling values by which association between ‘any physical activity’ and and risk of developing or dying from cancer becomes non-statistically significant ( $P>0.05$ )**



**Table S8: Robustness of evidence grading for meta-analyses of cohort studies associating recreational physical activity and risk of developing or dying from cancer.**

Cancer	PA domain	Number of Studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P <sup>†</sup>	Excess significance		
										Credibility ceiling value (%) by which P>0.05	O/E <sup>‡,##</sup>	P-value <sup>‡</sup>
<b>Associations supported by strong evidence</b>												
Colon, inc. or mort.	R	10	7253/995243	0.84 (0.75, 0.94)	0.79 (0.71, 0.86)	2.9E-07	0.66, 0.93	15 (0, 60)	0.552	16	5/5.38	NP
<b>Associations supported by suggestive evidence</b>												
Lung, inc.	R	20	15777/2138946	1.00 (0.93, 1.09)	0.79 (0.70, 0.90)	2.5E-04	0.47, 1.35	90 (86, 92)	0.287	9	8/1.00	2.9E-06
All, mort.	R	10	21657/691126	0.91 (0.83, 1.00)	0.81 (0.74, 0.90)	6.1E-05	0.62, 1.08	56 (0, 77)	0.113	16	6/4.38	0,350
<b>Associations supported by weak evidence</b>												
Esophageal, inc.	R	4	896/1840876	0.84 (0.66, 1.06)	0.83 (0.69, 0.99)	0.038	0.56, 1.22	0 (0, 68)	0.958	7	0/1.19	NP
Meningioma, inc. or mort.	R	2	500/1231245	0.73 (0.56, 0.97)	0.69 (0.55, 0.88)	0.002	NA	0 (NA)	NA	7	2/1.41	1,000
<b>Associations were not statistically significant</b>												
Gastric, inc.	R	7	5473/1789916	0.91 (0.85, 0.97)	0.99 (0.82, 1.20)	0.951	0.57, 1.72	61 (0, 81)	0.600	0	3/1.77	0.379
Pancreas, inc.	R	15	5220/3863482	1.00 (0.91, 1.10)	0.93 (0.88, 1.01)	0.076	0.83, 1.06	11 (0, 52)	0.166	0	0/0.75	NP
Pancreas, mort.	R	4	879/264361	0.97 (0.72, 1.32)	0.99 (0.81, 1.22)	0.960	0.63, 1.56	0 (0, 68)	0.866	0	0/0.22	NP
Kidney, inc.	R	7	2397/1069822	0.77 (0.64, 0.92)	0.86 (0.69, 1.08)	0.199	0.49, 1.54	51 (0, 77)	0.726	0	2/3.86	NP
Rectum, inc.	R	7	3007/1293629	0.81 (0.67, 0.98)	0.98 (0.79, 1.22)	0.861	0.54, 1.79	58 (0, 80)	0.493	0	1/3.81	NP
Non-Hodgkin lymphoma, inc. or mort.	R	6	4760/864289	0.86 (0.74, 1.02)	0.93 (0.83, 1.03)	0.147	0.77, 1.1	5 (0, 63)	0.965	0	0/3.17	NP
Diffuse large B-cell lymphoma, inc. or mort.	R	3	876/425918	0.89 (0.63, 1.27)	0.92 (0.72, 1.16)	0.468	0.20, 4.17	0 (0, 73)	0.420	0	0/0.54	NP
Follicular lymphoma, inc. or mort.	R	3	606/425918	0.82 (0.54, 1.25)	1.00 (0.77, 1.32)	0.977	0.18, 5.56	0 (0, 73)	0.902	0	0/1.04	NP
Leukemia, inc. or mort.	R	3	480/585778	1.09 (0.84, 1.41)	1.03 (0.83, 1.30)	0.783	0.24, 4.35	0 (0, 73)	0.157	0	0/0.28	NP
Chronic/small lymphocytic lymphoma, inc. or mort.	R	3	891/425918	0.85 (0.61, 1.18)	1.02 (0.77, 1.37)	0.868	0.07, 14.29	33 (0, 81)	0.074	0	0/1.00	NP
Multiple myeloma, inc. or mort.	R	5	1190/915303	1.19 (0.93, 1.52)	0.82 (0.60, 1.11)	0.202	0.30, 2.22	62 (0, 84)	0.044	0	1/1.52	NP
Bladder, inc.	R	8	3418/1167375	0.86 (0.73, 1.01)	0.89 (0.78, 1.02)	0.102	0.66, 1.22	32 (0, 69)	0.868	0	1/2.69	NP
Endometrial, inc.	R	5	2666/255925	0.84 (0.69, 1.02)	0.93 (0.82, 1.04)	0.209	0.76, 1.12	0 (0, 64)	0.601	0	0/2.78	NP
Thyroid, papillary, inc.	R	3	617/305887	0.99 (0.71, 1.39)	1.30 (0.83, 2.04)	0.256	0.01, 100	52 (0, 85)	0.321	0	1/0.15	0,145
Glioma, inc. or mort.	R	2	878/1494017	0.91 (0.75, 1.12)	0.90 (0.75, 1.08)	0.246	NA	0 (NA)	NA	0	0/0.39	NP

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; RR, relative risk; R, recreational.

\*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\* Random effects refer to summary risk ratio (95% CI) using the random-effects model.

#P-value of the summary random effects estimate.

†P-value from the Egger's regression asymmetry test.

‡Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

‡ P-value of the excess statistical significance test.

**Figure S2 – Credibility ceiling values by which association between recreational physical activity and risk of developing or dying from cancer becomes non-statistically significant ( $P>0.05$ )**



**Table S9: Robustness of evidence grading for meta-analyses of both cohort and case-control studies associating physical activity and risk of developing or dying from cancer among women\***

Cancer	PA domain	Number of Studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P <sup>†</sup>	Excess significance
									O/E <sup>‡,##</sup>	P-value <sup>§</sup>
<b>Associations supported by suggestive evidence</b>										
Endometrial, inc.	T, R, O, Other (NR)	18	13583/2174565	0.76 (0.67, 0.85)	0.83 (0.76, 0.92)	1.2E-04	0.66, 1.05	32 (0, 61)	0.399	4/11.34
<b>Associations supported by weak evidence</b>										
Colon, inc. or mort.	T, R (leisure), O	14	12661/956270	0.97 (0.93, 1.01)	0.89 (0.81, 0.99)	0.027	0.69, 1.16	43 (0, 68)	0.300	3/1.12
Bladder, inc.	R, O	4	3912/1047776	0.85 (0.75, 0.98)	0.83 (0.74, 0.93)	0.002	0.64, 1.08	0 (0, 68)	0.492	1/1.70
All, mort.	T, R, O, Other (multiple domains <sup>§</sup> )	10	12963/394991	0.73 (0.64, 0.84)	0.85 (0.76, 0.94)	0.003	0.62, 1.15	59 (0, 78)	0.096	5/8.11
Multiple sites, inc. or mort.	H	8	15016/1555459	0.88 (0.81, 0.95)	0.93 (0.87, 0.98)	0.012	0.85, 1.00	2 (0, 57)	0.045	1/4.35
Meningioma, inc. or mort.	R	2	500/1231245	0.73 (0.56, 0.97)	0.69 (0.55, 0.88)	0.002	NA	0 (NA)	NA	2/1.41
Gastric, inc. or mort.	T	2	853/51991	0.63 (0.42, 0.94)	0.60 (0.41, 0.89)	0.011	NA	0 (NA)	NA	1/1.97
<b>Associations were not statistically significant</b>										
Gastric, inc.	T, R	3	193/484285	0.87 (0.52, 1.45)	0.89 (0.62, 1.28)	0.537	0.08, 9.09	0 (0, 73)	0.647	NP
Pancreas, inc.	T, R, O	13	3986/2578186	1.00 (0.91, 1.10)	0.94 (0.85, 1.04)	0.237	0.77, 1.15	19 (0, 58)	0.190	0/0.65
Pancreas, mort.	T, R	3	325/139882	0.81 (0.50, 1.32)	1.09 (0.57, 2.04)	0.808	0.01, 100	55 (0, 86)	0.219	0/0.68
Kidney, inc.	T, R, O	4	934/376381	1.25 (0.79, 1.96)	0.83 (0.52, 1.35)	0.460	0.13, 5.26	57 (0, 84)	0.417	1/1.63
Rectum, inc.	R, O, Other (lifetime)	7	32374/1080466	1.00 (0.77, 1.25)	1.04 (0.89, 1.22)	0.586	0.85, 1.28	0 (0, 58)	0.143	0/0.35
Lung, inc.	R (leisure)	7	2234/447821	1.04 (0.95, 1.14)	0.96 (0.87, 1.05)	0.395	0.79, 1.16	17 (0, 65)	0.072	1/0.47
Ovary, inc.	NR	9	2467/705874	1.18 (0.94, 1.47)	0.97 (0.74, 1.28)	0.842	0.42, 2.27	69 (22, 83)	0.296	3/2.84
Non-Hodgkin lymphoma, inc. or mort.	R	5	3162/610404	0.97 (0.79, 1.20)	0.90 (0.75, 1.09)	0.290	0.51, 1.59	51 (0, 80)	0.824	1/0.35
Diffuse large B-cell lymphoma, inc. or mort.	T, R	4	687/572472	0.89 (0.59, 1.35)	0.98 (0.64, 1.49)	0.909	0.20, 4.76	54 (0, 83)	0.111	1/0.54
Follicular lymphoma, inc. or mort.	T, R	4	512/572472	1.25 (0.81, 1.92)	1.09 (0.81, 1.47)	0.592	0.56, 2.08	0 (0, 68)	0.661	0/1.14
Chronic/small lymphocytic lymphoma, inc. or mort.	R	3	620/356069	1.03 (0.70, 1.52)	1.02 (0.71, 1.47)	0.894	0.03, 33.33	43 (0, 83)	0.851	0/0.17
Multiple myeloma, inc. or mort.	T, R	6	627/677269	1.43 (0.90, 2.27)	0.79 (0.53, 1.16)	0.230	0.28, 2.22	44 (0, 76)	0.144	0/3.05
Thyroid, papillary, inc.	R, O	3	575/262682	0.99 (0.71, 1.39)	1.39 (0.79, 2.44)	0.259	0.01, 100	61 (0, 87)	0.253	1/0.15
Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NR, not reported; RR, relative risk; T, total; R, recreational; O, occupational; C, commuting; H, household.										
<sup>*</sup> Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.										
<sup>**</sup> Random effects refer to summary risk ratio (95% CI) using the random-effects model.										
<sup>#</sup> P-value of the summary random effects estimate.										
<sup>†</sup> P-value from the Egger's regression asymmetry test.										
<sup>‡</sup> Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.										
<sup>##</sup> Observed/Expected number of statistically significant studies										
<sup>§</sup> P-value of the excess statistical significance test.										
<sup>¶</sup> Multiple domains include a combination of at least two, but not all, of the following physical activity domains: occupational, recreational, household, and commuting.										

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NR, not reported; RR, relative risk; T, total; R, recreational; O, occupational; C, commuting; H, household.

\*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\*Random effects refer to summary risk ratio (95% CI) using the random-effects model.

#P-value of the summary random effects estimate.

†P-value from the Egger's regression asymmetry test.

‡Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

##Observed/Expected number of statistically significant studies

§P-value of the excess statistical significance test.

¶Multiple domains include a combination of at least two, but not all, of the following physical activity domains: occupational, recreational, household, and commuting.

**Table S10: Robustness of evidence grading for meta-analyses of cohort and case-control studies associating recreational physical activity and risk of developing or dying from cancer among women.**

Cancer	PA domain	Number of Studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Excess significance		
									Egger's P <sup>†</sup>	O/E <sup>‡,##</sup>	P-value <sup>‡</sup>
<b>Associations supported by weak evidence</b>											
Meningioma, inc. or mort.	R	2	500/1231245	0.73 (0.56, 0.97)	0.69 (0.55, 0.88)	0.002	NA	0 (NA)	NA	2/1.41	1
Colon, inc. or mort.	R	8	3138/488474	0.87 (0.71, 1.06)	0.85 (0.76, 0.96)	0.011	0.74, 0.99	0 (0, 56)	0.280	1/2.51	NP
Bladder, inc.	R	3	565/298200	0.66 (0.43, 1.01)	0.78 (0.60, 1.00)	0.049	0.15, 4	0 (0, 73)	0.619	0/2.54	NP
<b>Associations were not statistically significant</b>											
All, mort.	R	3	3672/105301	0.86 (0.75, 0.99)	0.89 (0.78, 1.02)	0.087	0.3, 2.63	16 (0, 77)	0.411	1/1.56	NP
Endometrial, inc.	R	5	2666/255925	0.84 (0.69, 1.02)	0.93 (0.82, 1.04)	0.209	0.76, 1.12	0 (0, 64)	0.601	0/2.78	NP
Diffuse large B-cell lymphoma, inc. or mort.	R	3	638/356069	0.89 (0.59, 1.35)	0.86 (0.66, 1.12)	0.271	0.16, 4.76	0 (0, 73)	0.842	0/0.47	NP
Multiple myeloma, inc. or mort.	R	5	539/460866	1.43 (0.90, 2.27)	0.79 (0.51, 1.2)	0.274	0.21, 2.94	54 (0, 81)	0.061	0/2.60	NP
Non-Hodgkin lymphoma, inc. or mort.	R	5	3162/610404	0.97 (0.79, 1.2)	0.9 (0.75, 1.09)	0.290	0.51, 1.59	51 (0, 80)	0.824	1/0.35	0.307
Pancreas, mort.	R	2	307/123297	0.81 (0.50, 1.32)	0.83 (0.56, 1.23)	0.362	NA	0 (NA)	NA	0/0.60	
Lung, inc.	R	7	2234/447821	1.04 (0.95, 1.14)	0.96 (0.87, 1.05)	0.395	0.79, 1.16	17 (0, 65)	0.072	1/0.47	0.385
Kidney, inc.	R	2	220/37081	1.14 (0.56, 2.27)	0.68 (0.23, 2.04)	0.491	NA	70 (NA)	NA	1/0.22	0.204
Pancreas, inc.	R	9	2321/1998731	1.00 (0.91, 1.10)	0.97 (0.85, 1.1)	0.622	0.77, 1.22	18 (0, 62)	0.324	0/0.45	NP
Rectal, inc.	R	4	1972/681728	0.97 (0.67, 1.41)	0.94 (0.7, 1.25)	0.682	0.37, 2.44	30 (0, 77)	0.775	0/0.26	NP
Follicular lymphoma, inc. or mort.	R	3	463/356069	1.25 (0.81, 1.92)	1.05 (0.78, 1.43)	0.752	0.15, 7.69	0 (0, 73)	0.186	0/1.00	NP
Thyroid, papillary, inc. or mort.	R	2	569/261258	0.99 (0.71, 1.39)	1.04 (0.78, 1.41)	0.777	NA	0 (NA)	NA	0/0.10	NP
Chronic/small lymphocytic lymphoma, inc. or mort.	R	3	620/356069	1.03 (0.70, 1.52)	1.02 (0.71, 1.47)	0.894	0.03, 33.33	43 (0, 83)	0.851	0/0.17	NP

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; RR, relative risk; R, recreational.

\*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\*Random effects refer to summary risk ratio (95% CI) using the random-effects model.

#P-value of the summary random effects estimate.

†P-value from the Egger's regression asymmetry test.

‡Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

‡P-value of the excess statistical significance test.

**Table S11: Robustness of evidence grading for meta-analyses of both cohort and case-control studies associating physical activity and risk of developing or dying from cancer among men**

Cancer	PA domain	Number of Studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P <sup>†</sup>	Excess significance
									O/E <sup>‡,##</sup>	P-value <sup>‡</sup>
<b>Associations supported by suggestive evidence</b>										
Colon, inc. or mort.	T, R (leisure), O	20	227217/2483745	1.00 (1.04, 0.96)	0.81 (0.89, 0.73)	2.3E-05	0.56, 1.16	76 (61, 83)	0.006	10/1.00
Lung, inc.	R (leisure)	14	5873/807977	0.97 (1.08, 0.88)	0.79 (0.89, 0.69)	2.2E-04	0.53, 1.18	71 (43, 82)	0.069	7/0.89
All, mort.	T, R, O, Other (multiple domains <sup>§</sup> )	15	20259/399612	0.93 (1.02, 0.84)	0.79 (0.87, 0.72)	1.5E-06	0.60, 1.06	60 (18, 76)	4.9E-04	10/3.94
<b>Associations were not statistically significant</b>										
Gastric, inc.	T, R	5	4147/879332	0.91 (0.97, 0.85)	0.86 (1.08, 0.69)	0.194	0.42, 1.75	64 (0, 84)	0.739	3/2.18
Pancreas, inc.	T, R	11	2376/1342080	0.93 (1.08, 0.8)	0.94 (1.03, 0.85)	0.215	0.84, 1.05	0 (0, 51)	0.492	0/1.00
Pancreas, mort.	T, R	4	393/122618	1.10 (1.61, 0.74)	1.00 (1.32, 0.77)	0.974	0.56, 1.82	0 (0, 68)	0.469	0/0.33
Kidney, inc.	T, R, O	5	3708/1225618	1.01 (1.23, 0.83)	0.89 (1.06, 0.74)	0.205	0.55, 1.43	36 (0, 76)	0.435	1/0.26
Rectum, inc.	R, O, Other (lifetime)	7	32121/1420422	0.91 (1.11, 0.83)	1.00 (1.20, 0.83)	0.966	0.63, 1.56	42 (0, 74)	0.056	1/1.95
Non-Hodgkin lymphoma, inc. or mort.	R, O	3	1518/199471	1.02 (1.27, 0.82)	1.01 (1.23, 0.83)	0.916	0.27, 3.70	0 (0, 73)	0.713	0/0.17
Diffuse large B-cell lymphoma, inc. or mort.	T, R	2	283/197202	1.14 (1.89, 0.70)	1.19 (1.92, 0.74)	0.463	NA	0 (NA)	NA	0/0.28
Follicular lymphoma, inc. or mort.	T, R	2	188/197202	0.86 (1.52, 0.49)	1.18 (3.33, 0.42)	0.753	NA	42 (NA)	NA	0/0.26
Leukemia, inc. or mort.	O	2	49/16837	1.08 (1.45, 0.78)	0.86 (1.69, 0.44)	0.662	NA	52 (NA)	NA	0/0.11
Multiple myeloma, inc. or mort.	T, R, O	6	735/584059	1.10 (1.47, 0.82)	0.90 (1.22, 0.67)	0.501	0.44, 1.85	33 (0, 73)	0.213	1/0.54
Bladder, inc.	R, O	9	21204/4277616	0.71 (0.76, 0.67)	0.95 (1.12, 0.80)	0.537	0.55, 1.64	82 (63, 89)	0.006	2/6.35
Multiple sites, inc. or mort.	Household	3	1501/303697	1.04 (1.32, 0.82)	0.99 (1.22, 0.81)	0.905	0.26, 3.7	0 (0, 73)	0.435	0/0.23
Gastric, inc. or mort.	T, R	2	680/45486	1.04 (1.28, 0.84)	1.03 (1.27, 0.83)	0.800	NA	0 (NA)	NA	0/0.14

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; RR, relative risk; T, total; R, recreational; O, occupational; C, commuting; H, household.

\*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\* Random effects refer to summary risk ratio (95% CI) using the random-effects model.

#P-value of the summary random effects estimate.

†P-value from the Egger's regression asymmetry test.

‡Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

‡ P-value of the excess statistical significance test.

§ Multiple domains include a combination of at least two, but not all, of the following physical activity domains: occupational, recreational, household, and commuting.

**Table S12: Robustness of evidence grading for meta-analyses of cohort and case-control studies associating recreational physical activity and risk of developing or dying from cancer among men.**

Cancer	PA domain	Number of Studies	Number of cases/Sample size	Largest study, RR (95% CI)*	Excess significance					
					Random Effects, RR (95% CI)**	Random Effects, P#	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P†	O/E‡,## P-value*
<b>Associations supported by suggestive evidence</b>										
Colon, inc. or mort.	R	7	4115/506769	0.82 (0.71, 0.95)	0.70 (0.60, 0.83)	1.26E-05	0.47, 1.05	41 (0, 74)	0.043	5/3.72 0.460
Lung, inc	R	14	5873/807977	0.97 (0.88, 1.08)	0.79 (0.69, 0.89)	2.0E-04	0.53, 1.18	71 (43, 82)	0.069	7/0.89 9.63E-06
<b>Associations supported by weak evidence</b>										
All, mort	R	5	12747/155145	0.95 (0.84, 1.08)	0.82 (0.69, 0.98)	0.0259	0.45, 1.49	75 (8, 88)	0.179	3/1.31 0.116
<b>Associations were not statistically significant</b>										
Pancreas, inc.	R	9	2052/1226927	0.93 (0.8, 1.08)	0.93 (0.85, 1.04)	0.208	0.83, 1.06	0 (0, 54)	0.581	0/0.84 NP
Kidney, inc.	R	3	784/476431	1.01 (0.83, 1.23)	0.83 (0.58, 1.20)	0.3278	0.02, 33.33	45 (0, 84)	0.034	0/0.15 NP
Bladder, inc.	R	6	2795/812492	0.87 (0.73, 1.03)	0.93 (0.81, 1.09)	0.382	0.65, 1.33	34 (0, 73)	0.335	1/2.02 NP
Multiple myeloma, inc. or mort.	R	4	651/454437	1.10 (0.82, 1.47)	0.88 (0.63, 1.22)	0.425	0.26, 2.94	45 (0, 81)	0.0989	1/0.41 0.354
Gastric, inc.	R	3	3904/453992	0.91 (0.85, 0.97)	1.08 (0.75, 1.54)	0.681	0.02, 50.00	77 (0, 91)	0.545	2/1.05 0.284
Non-Hodgkin lymphoma, inc. or mort.	R	2	1512/197202	1.02 (0.82, 1.27)	1.02 (0.83, 1.27)	0.812	NA	0 (NA)	NA	0/0.12 NP
Rectal, inc.	R	3	1624/595812	0.76 (0.61, 0.95)	1.04 (0.65, 1.69)	0.863	NA	65 (0, 88)	0.104	1/1.91 NP
Pancreas, mort.	R	3	360/108377	1.1 (0.74, 1.61)	1.00 (0.76, 1.33)	0.988	0.16, 6.25	0 (0, 73)	0.222	0/0.27 NP

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; RR, relative risk; R, recreational.

\*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\*Random effects refer to summary risk ratio (95% CI) using the random-effects model.

#P-value of the summary random effects estimate.

†P-value from the Egger's regression asymmetry test.

‡Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

\*P-value of the excess statistical significance test.

**Table S13: Robustness of evidence grading for meta-analyses of cohort studies associating total physical activity and risk of developing or dying from cancer.**

Cancer	PA domain	Number of Studies	Number of cases/Sample size	Largest study, RR (95% CI)*	Random Effects, RR (95% CI)**	Random Effects, P#	95% Prediction Interval	I <sup>2</sup> (95% CI)	Excess significance		
									Egger's P†	O/E‡,##	P-value§
<b>Associations supported by weak evidence</b>											
Colon, inc. or mort.	T	11	3592/861158	0.99 (0.96, 1.01)	0.84 (0.74, 0.94)	0.004	0.61, 1.16	54 (0, 75)	0.002	3/0.58	0.017
<b>Associations were not statistically significant</b>											
Gastric, inc.	T	3	1224/916187	0.71 (0.56, 0.91)	0.85 (0.58, 1.25)	0.411	0.01, 100	78 (0, 91)	0.454	2/2.66	NP
Pancreas, inc.	T	4	986/719136	1.00 (0.76, 1.32)	0.85 (0.68, 1.08)	0.183	0.46, 1.59	12 (0, 72)	0.029	0/0.20	NP
Diffuse large B-cell lymphoma, inc. or mort.	T	2	437/809614	0.87 (0.61, 1.25)	1.56 (0.41, 5.88)	0.512	NA	82 (NA)	NA	1/0.41	0.370
Follicular lymphoma, inc. or mort.	T	2	351/809614	0.96 (0.63, 1.47)	1.39 (0.53, 3.70)	0.504	NA	63 (NA)	NA	0/0.12	NP
Endometrial, inc.	T	5	1499/352682	0.88 (0.61, 1.27)	0.76 (0.56, 1.03)	0.080	0.29, 2.00	58 (0, 82)	1.6E-04	1/1.14	NP
Thyroid, inc.	T	4	770/629862	1.11 (0.91, 1.35)	1.16 (0.85, 1.59)	0.344	0.39, 3.45	39 (0, 79)	0.769	0/0.51	NP
All, mort.	T	2	2404/132720	0.96 (0.82, 1.12)	0.88 (0.75, 1.04)	0.142	0.61, 1.16	55 (NA)	NA	1/0.24	0.228
Gastric, inc. or mort.	T	2	2095/89889	0.93 (0.77, 1.14)	0.69 (0.25, 1.89)	0.466	NA	50 (NA)	NA	0/0.49	NP

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; RR, relative risk; T, Total.

\*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\*Random effects refer to summary risk ratio (95% CI) using the random-effects model.

#P-value of the summary random effects estimate.

†P-value from the Egger's regression asymmetry test.

‡ Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

§ P-value of the excess statistical significance test.

**Table S14: Robustness of evidence grading for meta-analyses of cohort studies associating occupational physical activity and risk of developing or dying from cancer**

Cancer	PA domain	Number of Studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Excess significance	
									Egger's P <sup>†</sup>	O/E <sup>‡,##</sup>
<b>Associations supported by suggestive evidence</b>										
Endometrial, inc.	O	5	8133/1425307	0.76 (0.67, 0.85)	0.82 (0.74, 0.92)	7.0E-04	0.65, 1.04	10 (0, 68)	0.498	1/2.18
<b>Associations supported by weak evidence</b>										
Breast, inc.	O	3	61710/2377223	0.91 (0.87, 0.94)	0.87 (0.79, 0.95)	0.002	0.33, 2.27	55 (0, 86)	0.435	2/2.20
Pancreas, inc.	O	4	1893/903214	0.91 (0.77, 1.08)	0.85 (0.75, 0.99)	0.032	0.63, 1.16	0 (0, 68)	0.159	1/0.81
Colon, inc. or mort.	O	7	235278/2013135	0.78 (0.71, 0.86)	0.83 (0.72, 0.95)	0.010	0.53, 1.30	79 (47, 88)	0.675	3/3.32
<b>Associations were not statistically significant</b>										
Gastric, inc.	O	4	1402/1269353	0.92 (0.62, 1.37)	1.02 (0.69, 1.52)	0.911	0.22, 4.76	53 (0, 83)	0.639	1/0.55
Kidney, inc.	O	5	5020/1458456	0.86 (0.71, 1.04)	0.88 (0.76, 1.03)	0.107	0.69, 1.14	0 (0, 64)	0.268	0/2.34
Rectum, inc.	O	3	30885/1381176	0.93 (0.83, 1.05)	0.95 (0.85, 1.06)	0.387	0.47, 1.96	0 (0, 73)	0.361	0/1.24
Non-Hodgkin lymphoma, inc. or mort.	O	2	781/346025	1.32 (0.68, 2.56)	1.09 (0.64, 1.85)	0.755	NA	0 (NA)	NA	0/1.06
Leukemia, inc. or mort.	O	2	49/16837	1.08 (0.78, 1.45)	0.86 (0.44, 1.69)	0.662	NA	52 (NA)	NA	0/0.11
Bladder, inc.	O	4	21826/4222706	0.74 (0.69, 0.78)	0.96 (0.72, 1.28)	0.802	0.28, 3.33	87 (61, 93)	0.141	1/1.96

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; RR, relative risk; O, occupational.

\*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\* Random effects refer to summary risk ratio (95% CI) using the random-effects model.

#P-value of the summary random effects estimate.

†P-value from the Egger's regression asymmetry test.

‡Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

‡ P-value of the excess statistical significance test.

**Table S15: Robustness of evidence grading for meta-analyses of cohort studies associating other physical activity domains and risk of developing or dying from cancer.**

Cancer	PA domain	Number of Studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P <sup>†</sup>	Excess significance	
										O/E <sup>‡,##</sup>	P-value <sup>‡</sup>
<b>Associations supported by highly suggestive evidence</b>											
All, mort.	Multiple domains <sup>§</sup>	13	16408/1706226	0.91 (0.84, 0.99)	0.75 (0.68, 0.83)	7.1E-09	0.58, 0.98	52 (0, 73)	0.044	10/4.64	0.003
<b>Associations supported by suggestive evidence</b>											
Breast, inc.	Non-O	22	32488/993288	0.91 (0.83, 1.01)	0.86 (0.83, 0.91)	1.2E-08	0.76, 0.98	24 (0, 54)	0.068	6/9.16	NP
Breast, inc.	O and non-O	13	22106/736220	0.91 (0.85, 0.99)	0.88 (0.82, 0.93)	1.5E-04	0.74, 1.04	37 (0, 66)	0.650	6/4.50	0.392
Endometrial, inc.	NR	3	1285/140651	0.77 (0.63, 0.95)	0.72 (0.6, 0.87)	4.9E-04	0.22, 2.33	0 (0, 73)	0.102	2/1.69	1.000
<b>Associations supported by weak evidence</b>											
Multiple sites, inc. or mort.	Household	11	16969/2700104	0.88 (0.81, 0.95)	0.93 (0.87, 0.99)	0.029	0.84, 1.03	7 (0, 54)	0.626	2/5.59	NP
<b>Associations were not statistically significant</b>											
Rectum, inc.	Lifetime	5	1190/613454	1.02 (0.73, 1.45)	1.14 (0.93, 1.37)	0.214	0.83, 1.56	0 (0, 64)	0.406	0/0.27	NP
Ovary, inc.	NR	9	2467/705874	1.18 (0.94, 1.47)	0.97 (0.74, 1.28)	0.842	0.42, 2.27	69 (22, 83)	0.296	3/2.84	1.000

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NR, not reported; RR, relative risk; T, total; R, recreational; O, occupational; C, commuting; H, household.

\*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\*Random effects refer to summary risk ratio (95% CI) using the random-effects model.

#P-value of the summary random effects estimate.

†P-value from the Egger's regression asymmetry test.

‡Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

##Observed/Expected number of statistically significant studies

‡P-value of the excess statistical significance test.

<sup>§</sup>Multiple domains include a combination of at least two, but not all, of the following physical activity domains: occupational, recreational, household, and commuting.

**Table S16: Robustness of evidence grading for meta-analyses of case-control studies associating any physical activity and risk of developing or dying from cancer**

Cancer	PA domain	Number of Studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P <sup>†</sup>	Excess significance	
										O/E <sup>‡,##</sup>	P-value <sup>‡</sup>
<b>Associations supported by highly suggestive evidence</b>											
Breast, inc.	R	74	84982/272085	0.89 (0.87, 0.91)	0.74 (0.69, 0.78)	6.1E-25	0.53, 1.02	82 (78, 85)	7.6E-06	35/24.20	0.009
Colon, inc. or mort.	T, R (leisure), O, Other (C, NR)	25	44518/158194	0.74 (0.70, 0.77)	0.68 (0.64, 0.74)	3.3E-27	0.57, 0.82	30 (0, 56)	0.032	15/18.37	NP
<b>Associations supported by suggestive evidence</b>											
Ovary, invasive, inc.	NR	12	6799/26906	0.90 (0.70, 1.10)	0.84 (0.76, 0.92)	2.0E-04	0.76, 0.93	0 (0, 50)	0.976	2/2.48	NP
Endometrial, inc.	T, R, O, Other (NR)	15	5975/44587	0.77 (0.59, 1.00)	0.72 (0.65, 0.81)	5.7E-09	0.64, 0.81	0 (0, 46)	0.413	5/8.45	NP
<b>Associations supported by weak evidence</b>											
Gastric, inc.	T, R, O	10	5212/65699	0.77 (0.69, 0.86)	0.82 (0.69, 0.97)	0.021	0.52, 1.28	52 (0, 75)	0.500	4/5.53	NP
Lung, inc.	R (leisure)	7	6021/67649	0.58 (0.50, 0.67)	0.72 (0.57, 0.91)	0.007	0.33, 1.59	82 (60, 90)	0.629	4/6.61	NP
Multiple sites, inc. or mort.	H	20	16980/36237	0.88 (0.73, 1.08)	0.81 (0.67, 0.97)	0.024	0.36, 1.82	85 (78, 89)	0.299	9/6.17	0.224
<b>Associations were not statistically significant</b>											
Esophageal adenocarcinoma, inc.	T, R, O	8	2142/26259	0.81 (0.58, 1.12)	0.95 (0.56, 1.59)	0.842	0.15, 5.88	90 (84, 94)	0.656	4/3.01	0.486
Pancreas, inc.	T, R, O	8	2600/10573	0.81 (0.60, 1.09)	0.76 (0.58, 1.01)	0.055	0.33, 1.75	63 (0, 81)	0.629	2/3.17	NP
Kidney, inc.	T, R, O	8	4652/34724	0.90 (0.71, 1.14)	0.88 (0.74, 1.05)	0.152	0.54, 1.43	51 (0, 76)	0.479	2/1.82	1.000
Rectum, inc. or mort.	R (leisure), O	13	6116/65484	0.72 (0.62, 0.85)	0.87 (0.74, 1.03)	0.103	0.52, 1.47	59 (10, 76)	0.714	3/7.94	
Non-Hodgkin lymphoma, inc. or mort.	R, O	6	4204/28954	0.69 (0.56, 0.86)	0.91 (0.76, 1.09)	0.288	0.55, 1.49	49 (0, 78)	0.493	1/5.46	NP
Hodgkin lymphoma, inc. or mort.	R	2	241/1189	0.56 (0.37, 0.86)	0.67 (0.4, 1.11)	0.118	NA	34 (NA)	NA	1/1.53	NP
Leukemia, inc. or mort.	R, O	2	1029/20906	1.15 (0.88, 1.47)	1.08 (0.86, 1.33)	0.523	NA	0 (NA)	NA	0/0.72	NP
Bladder, inc.	R, O	4	2610/20294	0.78 (0.59, 1.05)	0.71 (0.43, 1.18)	0.181	0.07, 7.14	88 (68, 94)	0.631	1/2.92	NP
Thyroid, papillary, inc.	T, R	3	858/2132	0.76 (0.59, 0.98)	0.67 (0.44, 1.02)	0.061	0.01, 100	74 (0, 90)	0.664	2/1.47	0.618
Glioma, inc. or mort.	R	2	535/1460	0.76 (0.63, 0.91)	0.9 (0.58, 1.39)	0.630	NA	64 (NA)	NA	1/0.93	1.000

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NR, not reported; RR, relative risk; T, total; R, recreational; O, occupational; C, commuting; H, household.

\* Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\* Random effects refer to summary risk ratio (95% CI) using the random-effects model.

# P-value of the summary random effects estimate.

† P-value from the Egger's regression asymmetry test.

‡ Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

‡ P-value of the excess statistical significance test.

**Table S17: Robustness of evidence grading for meta-analyses of case-control studies associating recreational physical activity and risk of developing or dying from cancer.**

Cancer	PA domain	Number of Studies	Number of cases/Sample size	Largest study, RR (95% CI)*	Random Effects, RR (95% CI)**	Random Effects, P#	95% Prediction Interval	I <sup>2</sup> (95% CI)	Excess significance		
									Egger's P†	O/E‡,##	P-value§
<b>Associations supported by highly suggestive evidence</b>											
Breast, inc.	R	74	84982/272085	0.89 (0.87, 0.91)	0.74 (0.69, 0.78)	6.15E-25	0.53, 1.02	82 (78, 85)	7.62E-06	35/24.20	0.009
<b>Associations supported by suggestive evidence</b>											
Endometrial, inc.	R	10	4651/40724	0.77 (0.59, 1.00)	0.74 (0.65, 0.84)	2.58E-06	0.64, 0.86	0 (0, 53)	0.905	2/6.40	NP
Colon, inc. or mort.	R	7	2968/9694	0.70 (0.59, 0.83)	0.62 (0.51, 0.76)	3.48E-06	0.39, 0.99	33 (0, 71)	0.023	5/5.35	NP
<b>Associations supported by weak evidence</b>											
Esophageal, inc.	R	3	643/4190	0.81 (0.58, 1.12)	0.70 (0.56, 0.87)	0.001	0.17, 2.86	0 (0, 73)	0.498	2/1.03	0.273
Lung, inc	R	7	6021/67649	0.58 (0.50, 0.67)	0.72 (0.57, 0.91)	0.007	0.33, 1.59	82 (60, 90)	0.629	4/6.61	NP
<b>Associations were not statistically significant</b>											
Bladder, inc.	R	2	1263/2591	0.78 (0.59, 1.05)	0.52 (0.24, 1.15)	0.106	NA	93 (NA)	NA	1/1.37	NP
Hodgkin lymphoma, inc. or mort.	R	2	241/1189	0.56 (0.37, 0.86)	0.67 (0.40, 1.11)	0.118	NA	34 (NA)	NA	1/1.53	NP
Pancreas, inc.	R	5	2089/8824	0.81 (0.6, 1.09)	0.77 (0.52, 1.14)	0.194	0.19, 3.13	78 (24, 89)	0.606	2/2.43	NP
Kidney, inc.	R	7	4203/17577	0.90 (0.71, 1.14)	0.91 (0.74, 1.11)	0.352	0.5, 1.67	59 (0, 80)	0.416	2/1.59	0.661
Non-Hodgkin lymphoma, inc. or mort.	R	4	2577/7097	0.69 (0.56, 0.86)	0.91 (0.69, 1.19)	0.487	0.3, 2.7	65 (0, 86)	0.553	1/3.47	NP
Gastric, inc.	R	6	2454/10440	0.69 (0.50, 0.96)	0.90 (0.65, 1.25)	0.537	0.32, 2.56	74 (18, 87)	0.488	3/4.65	NP
Glioma, inc. or mort.	R	2	535/1460	0.76 (0.63, 0.91)	0.90 (0.58, 1.39)	0.630	NA	64 (NA)	NA	1/0.93	1.00
Rectal, inc. or mort.	R	4	726/4342	0.61 (0.41, 0.91)	0.90 (0.55, 1.47)	0.676	0.12, 6.67	69 (0, 87)	0.833	1/3.42	NP

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; RR, relative risk; R, recreational.

\*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\* Random effects refer to summary risk ratio (95% CI) using the random-effects model.

#P-value of the summary random effects estimate.

†P-value from the Egger's regression asymmetry test.

‡ Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

§ P-value of the excess statistical significance test.

**Table S18: Subgroup analysis of physical activity and all cancer mortality.**

Variable	Number of studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P <sup>†</sup>	Excess significance		
									O/E <sup>‡,##</sup>	P-value <sup>‡</sup>	Evidence Grade
<b>Location</b>											
Asia	10	15280/1745014	0.91 (0.84, 0.99)	0.83 (0.75, 0.91)	6.4E-05	0.63, 1.08	59 (0, 78)	0.1572	6/ 4.28	0.34	Suggestive
Europe	10	6737/499535	0.76 (0.66, 0.87)	0.72 (0.67, 0.79)	1.4E-15	0.66, 0.79	0 (0, 53)	0.0113	9/ 7.44	0.47	Highly suggestive
North America	5	18452/285523	0.91 (0.83, 1.00)	0.87 (0.76, 0.99)	2.9E-02	0.58, 1.28	59 (0, 83)	0.9839	2/ 3.14	NP	Weak
<b>Validation of PA questionnaire</b>											
No	13	9484/1548809	0.91 (0.84, 0.99)	0.75 (0.65, 0.85)	2.4E-05	0.51, 1.09	54 (0, 74)	0.0112	8/ 3.09	0	Suggestive
Yes	12	30985/981263	0.91 (0.83, 1.00)	0.81 (0.76, 0.87)	2.3E-09	0.66, 1.00	55 (0, 75)	0.2676	9/ 6.78	0.25	Highly suggestive
<b>Number of PA categories</b>											
3 or more	25	40469/2530072	0.91 (0.84, 0.99)	0.79 (0.75, 0.85)	5.0E-13	0.64, 0.99	53 (18, 69)	0.0081	17/ 9.95	0.01	Highly suggestive
<b>Adjustment for classic risk factors<sup>§</sup></b>											
No	12	18455/1657517	0.91 (0.84, 0.99)	0.81 (0.73, 0.89)	2.1E-05	0.61, 1.06	57 (0, 76)	0.0475	8/ 4.65	0.07	Suggestive
Yes	13	22014/872555	0.91 (0.83, 1.00)	0.78 (0.72, 0.85)	4.3E-09	0.63, 0.98	49 (0, 72)	0.1150	9/ 5.23	0.05	Highly suggestive
<b>Presence of lost to follow-up</b>											
No	8	6753/1124357	0.91 (0.84, 0.99)	0.78 (0.66, 0.91)	2.0E-03	0.51, 1.18	49 (0, 76)	0.1022	5/ 1.96	0.02	Weak
Yes	17	33716/1405715	0.91 (0.83, 1.00)	0.8 (0.75, 0.85)	1.6E-10	0.64, 1.00	55 (9, 73)	0.0471	12/ 7.89	0.05	Highly suggestive
<b>PA criteria</b>											
Increment of 10 MET-h/week	21	51828/1514022	0.99 (0.97, 1.00)	0.93 (0.9, 0.95)	5.0E-10	0.85, 1.00	75 (61, 83)	<0.001	15/ 1.37	0	Highly suggestive
Non-occasional PA	32	59362/2924576	0.92 (0.89, 0.94)	0.85 (0.81, 0.88)	9.4E-18	0.72, 0.99	71 (56, 79)	0.0018	24/ 11	0	Highly suggestive
<b>Publication year</b>											
<2010	13	15547/1348072	0.91 (0.84, 0.99)	0.74 (0.66, 0.82)	1.2E-08	0.55, 0.99	58 (6, 76)	0.0126	10/ 4.35	0	Highly suggestive
>=2010	12	24922/1182000	0.91 (0.83, 1.00)	0.84 (0.78, 0.91)	4.2E-06	0.69, 1.02	43 (0, 70)	0.3049	7/ 5.53	0.41	Suggestive

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; PA, physical activity; RR, relative risk.

\*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\*Random effects refer to summary risk ratio (95% CI) using the random-effects model.

#P-value of the summary random effects estimate.

†P-value from the Egger's regression asymmetry test.

‡Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

##Observed/Expected number of statistically significant studies

‡P-value of the excess statistical significance test.

§Age, gender, body mass index, alcohol drinking, and tobacco smoking were specified as classic risk factor.

**Table S19: Subgroup analysis of physical activity and bladder cancer**

Variable	Number of studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P <sup>†</sup>	Excess significance		Evidence Grade
									O/E <sup>‡,##</sup>	P-value <sup>*</sup>	
<b>Location</b>											
Europe	6	22362/4239725	0.74 (0.69, 0.78)	1.03 (0.79, 1.33)	0.831	0.45, 2.38	85 (65, 91)	0.0246	2/ 3.54	NP	NS
North America	8	5008/717681	0.86 (0.73, 1.01)	0.74 (0.58, 0.93)	0.010	0.34, 1.59	79 (51, 88)	0.444	1/ 3.31	NP	Weak
<b>Timing in life PA</b>											
Consistent PA over time	2	751/3411	0.78 (0.59, 1.05)	0.87 (0.63, 1.19)	0.388	NA	27 (NA)	NA	0/ 1.15	NP	NS
Past	5	21938/4260165	0.74 (0.69, 0.78)	0.88 (0.69, 1.11)	0.284	0.39, 2	82 (48, 91)	0.305	1/ 2.4	NP	NS
Recent	8	5095/1138793	0.86 (0.73, 1.01)	0.83 (0.65, 1.08)	0.163	0.36, 1.92	83 (66, 90)	0.985	2/ 3.58	NP	NS
<b>Type of physical activity assessment</b>											
Energy expenditure	3	1752/129841	0.98 (0.77, 1.25)	0.71 (0.34, 1.52)	0.383	0.01, 100	93 (83, 96)	0.985	1/ 0.17	0.16	NS
Frequency	2	1777/528443	0.86 (0.73, 1.01)	0.85 (0.72, 0.99)	0.040	NA	0 (NA)	NA	0/ 1.04	NP	Weak
Qualitative	10	24255/4744085	0.74 (0.69, 0.78)	0.91 (0.78, 1.06)	0.213	0.56, 1.47	75 (47, 85)	0.037	2/ 6.24	NP	NS
<b>Adjustment for smoking</b>											
No	4	21814/4271383	0.74 (0.69, 0.78)	0.93 (0.69, 1.22)	0.585	0.27, 3.13	86 (59, 93)	0.275	1/ 1.92	NP	NS
Yes	11	5970/1130986	0.86 (0.73, 1.01)	0.83 (0.68, 1.01)	0.062	0.43, 1.61	77 (56, 86)	0.958	2/ 4.26	NP	NS
<b>Adjustment for adiposity</b>											
No	8	24114/4430002	0.74 (0.69, 0.78)	0.93 (0.78, 1.11)	0.412	0.55, 1.59	76 (42, 86)	0.036	1/ 5.42	NP	NS
Yes	7	3670/972367	0.86 (0.73, 1.01)	0.78 (0.58, 1.04)	0.090	0.29, 2.04	85 (69, 91)	0.869	2/ 2.38	NP	NS
<b>Number of adjustment factors</b>											
Number of adjustment factors greater than the median	6	3682/1096115	0.86 (0.73, 1.01)	0.87 (0.79, 0.96)	0.006	0.76, 1.00	0 (0, 61)	0.258	0/ 2.62	NP	Weak
Number of adjustment factors lower than the median	9	24102/4306254	0.74 (0.69, 0.78)	0.87 (0.68, 1.11)	0.255	0.39, 1.92	86 (76, 91)	0.380	3/ 5.26	NP	NS
<b>PA intensity</b>											
High	9	25358/4403941	0.74 (0.69, 0.78)	0.79 (0.63, 0.99)	0.042	0.38, 1.64	80 (58, 88)	0.626	3/ 7.02	NP	Weak
Moderate	9	25358/4403941	0.78 (0.74, 0.81)	0.83 (0.72, 0.96)	0.014	0.56, 1.25	65 (7, 81)	0.431	2/ 6.14	NP	Weak
Total	9	3740/1114100	0.86 (0.73, 1.01)	0.93 (0.83, 1.02)	0.134	0.73, 1.16	29 (0, 67)	0.833	0/ 2.82	NP	NS
<b>PA domain</b>											
Occupational	7	23657/4241426	0.74 (0.69, 0.78)	0.93 (0.76, 1.15)	0.493	0.50, 1.72	77 (42, 87)	0.088	1/ 4.49	NP	NS
Recreational	10	4681/1169966	0.86 (0.73, 1.01)	0.8 (0.64, 0.99)	0.039	0.39, 1.64	79 (58, 87)	0.804	2/ 3.34	NP	Weak

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NS, not significant; PA, physical activity; RR, relative risk.

\*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\*Random effects refer to summary risk ratio (95% CI) using the random-effects model.

#P-value of the summary random effects estimate.

†P-value from the Egger's regression asymmetry test.

‡ Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

\* P-value of the excess statistical significance test.

**Table S20: Subgroup analysis of physical activity and breast cancer in cohort studies**

Variable	Number of studies	Number of cases/Sample size	Largest study, RR (95% CI)*	Random Effects, RR (95% CI)**	Random Effects, P#	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P*	Excess significance		
									O/E‡,##	P-value‡	Evidence Grade
<b>Obesity status</b>											
High BMI	21	20114/1217489	0.86 (0.77, 0.96)	0.87 (0.81, 0.93)	4.2E-05	0.81, 0.93	0 (0, 41)	0.290	3/ 16.9	NP	Suggestive
Low BMI	21	20114/1216489	0.95 (0.87, 1.05)	0.83 (0.77, 0.89)	1.3E-06	0.67, 1.03	39 (0, 63)	0.003	9/ 11.3	NP	Suggestive
<b>Hormone replacement therapy use</b>											
Ever	6	6553/168106	0.97 (0.88, 1.08)	0.97 (0.90, 1.04)	4.1E-01	0.87, 1.08	0 (0, 61)	0.724	0/ 1.46	NP	NS
Never	6	5285/261936	0.76 (0.67, 0.86)	0.78 (0.72, 0.85)	2.6E-09	0.70, 0.88	0 (0, 61)	0.433	4/ 5.36	NP	Strong
All women	6	13715/433108	0.86 (0.79, 0.94)	0.88 (0.83, 0.93)	9.3E-06	0.81, 0.95	0 (0, 61)	0.483	2/ 5.1	NP	Suggestive
<b>Menopausal status</b>											
Postmenopausal women	32	64331/2248903	0.91 (0.85, 0.99)	0.88 (0.84, 0.91)	4.1E-11	0.79, 0.97	19 (0, 47)	0.005	10/ 17.9	NP	Highly suggestive
Premenopausal women	18	36612/1538715	0.89 (0.82, 0.97)	0.87 (0.78, 0.96)	5.1E-03	0.64, 1.18	51 (2, 70)	0.590	7/ 11.7	NP	Weak
Mixed menopausal status	26	88996/3440109	0.91 (0.87, 0.94)	0.86 (0.82, 0.90)	8.8E-10	0.75, 0.99	36 (0, 59)	0.132	10/ 9.72	1	Strong
<b>RR Adjusted for BMI</b>											
No	30	94478/3361843	0.91 (0.87, 0.94)	0.86 (0.83, 0.90)	1.4E-12	0.76, 0.98	35 (0, 58)	0.032	13/ 12.7	1	Highly suggestive
Yes	22	40866/1385960	0.91 (0.85, 0.99)	0.88 (0.84, 0.92)	5.5E-10	0.79, 0.97	20 (0, 52)	0.150	8/ 9.62	NP	Strong
<b>RR Adjusted for BMI§</b>											
No	14	19040/641072	0.95 (0.86, 1.05)	0.86 (0.81, 0.91)	3.8E-07	0.75, 0.99	28 (0, 61)	0.163	7/ 3.41	0.05	Suggestive
Yes	15	21365/678886	0.91 (0.83, 1.01)	0.88 (0.83, 0.93)	2.5E-06	0.78, 0.99	23 (0, 58)	0.186	4/ 6.3	NP	Suggestive
<b>PA domain</b>											
Non occupational	30	43646/1513099	0.87 (0.81, 0.94)	0.86 (0.83, 0.90)	2.1E-12	0.78, 0.96	23 (0, 50)	0.085	11/ 17.8	NP	Highly suggestive
Occupational	11	75897/2858401	0.91 (0.87, 0.94)	0.88 (0.83, 0.94)	1.1E-04	0.78, 1.01	29 (0, 64)	0.223	4/ 5.17	NP	Suggestive
<b>PA domain§§</b>											
Non occupational	6	11158/376935	0.87 (0.81, 0.94)	0.88 (0.78, 0.99)	3.1E-02	0.65, 1.19	40 (0, 75)	0.873	3/ 3.05	NP	Weak
Occupational	6	11158/376935	0.96 (0.88, 1.06)	0.93 (0.85, 1.01)	9.6E-02	0.80, 1.08	4 (0, 63)	0.111	1/ 0.91	1	NS
<b>Quantification of PA</b>											
Measured in hours/week	12	12714/585162	0.84 (0.75, 0.94)	0.81 (0.76, 0.86)	1.3E-11	0.76, 0.87	0 (0, 50)	0.556	7/ 8.92	NP	Strong
Measured in METs-h/week	12	31717/972744	0.87 (0.81, 0.94)	0.87 (0.84, 0.91)	1.5E-11	0.83, 0.91	0 (0, 50)	0.697	4/ 10.2	NP	Strong
Measured in other units	23	86905/3251520	0.91 (0.87, 0.94)	0.88 (0.83, 0.93)	9.2E-07	0.75, 1.02	45 (0, 65)	0.136	8/ 7.9	1	Highly suggestive
<b>Location</b>											
USA	22	34813/1030449	0.91 (0.85, 0.99)	0.86 (0.82, 0.90)	4.0E-09	0.75, 0.98	30 (0, 58)	0.034	7/ 8.86	NP	Highly suggestive
Non-USA	16	81491/3076282	0.91 (0.87, 0.94)	0.88 (0.84, 0.93)	3.6E-07	0.78, 0.99	30 (0, 61)	0.478	7/ 6.99	1	Strong
Asia	3	1576/127183	0.93 (0.79, 1.09)	0.90 (0.78, 1.04)	1.6E-01	0.29, 2.78	14 (0, 77)	0.901	1/ 0.45	0.38	NS
USA	22	34813/1030449	0.91 (0.85, 0.99)	0.86 (0.82, 0.9)	4.0E-09	0.75, 0.98	30 (0, 58)	0.034	7/ 8.86	NP	Highly suggestive
Europe	11	77148/2904388	0.91 (0.87, 0.94)	0.88 (0.83, 0.93)	2.9E-05	0.76, 1.02	42 (0, 70)	0.558	5/ 5.46	NP	Suggestive
<b>Period of study</b>											
After 1989	24	52479/1605320	0.91 (0.85, 0.99)	0.88 (0.86, 0.92)	3.4E-14	0.85, 0.92	0 (0, 40)	0.773	9/ 12.4	NP	Strong
Before 1989	14	63825/2501411	0.91 (0.87, 0.94)	0.80 (0.72, 0.89)	3.7E-05	0.61, 1.06	57 (5, 75)	0.035	5/ 3.41	0.35	Suggestive
<b>Tumour subtype</b>											
ER+PR+	12	25978/1129476	0.86 (0.76, 0.97)	0.89 (0.84, 0.94)	7.7E-05	0.83, 0.95	0 (0, 50)	0.158	2/ 11	NP	Suggestive
ER-PR-	11	25567/1090154	0.85 (0.68, 1.08)	0.79 (0.69, 0.91)	1.1E-03	0.64, 0.99	7 (0, 55)	0.935	1/ 10.8	NP	Weak

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NS, not significant; PA, physical activity; RR, relative risk. BMI, body-mass index; PA domain, physical activity domain;

\* Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\* Random effects refer to summary risk ratio (95% CI) using the random-effects model.

# P-value of the summary random effects estimate.

† P-value from the Egger's regression asymmetry test.

‡ Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

§ P-value of the excess statistical significance test.

§ Including only studies which reported both RRs: adjusted for BMI and non-adjusted for BMI

§§ Including only studies which reported both RRs for occupational PA and non-occupational PA separately

**Table S21: Subgroup analysis of physical activity and breast cancer in case-control studies**

Variable	Number of studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Excess significance			
								Egger's P <sup>†</sup>	O/E <sup>‡,##</sup>	P-value <sup>‡</sup>	Evidence Grade
<b>Menopausal status</b>											
Postmenopausal women	38	52657/157762	0.89 (0.87, 0.91)	0.70 (0.65, 0.76)	6.6E-19	0.49, 1.00	86 (81, 88)	8.132E-05	23 /13.9	<0.01	Highly suggestive
Premenopausal women	36	32325/114323	0.96 (0.93, 0.99)	0.78 (0.69, 0.87)	1.9E-05	0.45, 1.33	75 (64, 81)	0.004	12 /2.93	<0.01	Suggestive
<b>Tumour subtype</b>											
ER+PR+	4	1138/5085	0.69 (0.42, 1.14)	0.46 (0.23, 0.90)	2.4E-02	0.02, 10.00	83 (38, 92)	0.649	1 /3.25	NP	Weak
ER+PR-	2	198/1350	0.43 (0.19, 0.98)	0.60 (0.28, 1.28)	1.9E-01	NA	29 (NA)		1 /1.8	NP	NS
ER-PR-	4	469/4416	0.46 (0.24, 0.92)	0.48 (0.32, 0.73)	6.3E-04	0.19, 1.20	0 (0, 68)	0.575	1 /3.95	NP	Weak
ERPRunknown	2	608/1760	0.61 (0.36, 1.02)	0.56 (0.38, 0.81)	2.3E-03	NA	NA		1 /1.9	NP	Weak

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NS, not significant; PA, physical activity; RR, relative risk. ERPR, Estrogen receptors and Progesterone receptor.

\*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\*Random effects refer to summary risk ratio (95% CI) using the random-effects model.

#P-value of the summary random effects estimate.

† P-value from the Egger's regression asymmetry test.

‡ Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

‡ P-value of the excess statistical significance test.

**Table S22: Subgroup analysis of physical activity and chronic lymphocytic lymphoma/small lymphocytic lymphoma**

Variable	Number of studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Excess significance			Evidence Grade
								I <sup>2</sup>	Egger's P <sup>†</sup>	O/E <sup>‡,§</sup> # P-value <sup>‡</sup>	
<b>Location</b>											
North America	5	1403/893125	0.85 (0.61, 1.18)	1.01 (0.83, 1.22)	0.943	0.66, 1.54	16 (0, 69)	0.323	0/ 1.54	NP	NS
<b>Timing in life of PA</b>											
recent	5	1403/893125	0.85 (0.61, 1.18)	1.01 (0.83, 1.22)	0.943	0.66, 1.54	16 (0, 69)	0.323	0/ 1.54	NP	NS
<b>Study quality score</b>											
Lower tertile of quality score	2	402/122565	1.19 (0.81, 1.75)	1.28 (0.93, 1.75)	0.124	NA	0 (NA)	NA	0/ 0.48	NP	NS
Intermediate tertile of quality score	2	716/612708	0.85 (0.61, 1.18)	0.83 (0.64, 1.09)	0.173	NA	0 (NA)	NA	0/ 0.78	NP	NS
<b>Type of PA assessment</b>											
duration	2	409/279068	1.03 (0.7, 1.52)	1.18 (0.83, 1.67)	0.370	NA	15 (NA)	NA	0/ 0.11	NP	NS
energy expenditure	2	760/148199	0.85 (0.61, 1.18)	0.99 (0.71, 1.37)	0.955	NA	42 (NA)	NA	0/ 0.77	NP	NS
<b>Adjustment for smoking</b>											
no	3	636/588423	1.19 (0.81, 1.75)	1.1 (0.79, 1.54)	0.568	0.04, 25.00	39 (0, 82)	0.807	0/ 0.79	NP	NS
yes	2	767/304702	0.85 (0.61, 1.18)	0.92 (0.72, 1.18)	0.517	NA	0 (NA)	NA	0/ 0.83	NP	NS
<b>Adjustment for adiposity</b>											
yes	4	1125/891776	0.85 (0.61, 1.18)	0.96 (0.76, 1.22)	0.749	0.49, 1.89	20 (0, 74)	0.309	0/ 1.28	NP	NS
<b>Adjustment for alcohol</b>											
no	3	636/588423	1.19 (0.81, 1.75)	1.1 (0.79, 1.54)	0.568	0.04, 25.00	39 (0, 82)	0.807	0/ 0.79	NP	NS
yes	2	767/304702	0.85 (0.61, 1.18)	0.92 (0.72, 1.18)	0.517	NA	0 (NA)	NA	0/ 0.83	NP	NS
<b>Number of adjustment factors</b>											
Intermediate tertile of number of adjustment factors	2	767/304702	0.85 (0.61, 1.18)	0.92 (0.72, 1.18)	0.517	NA	0 (NA)	NA	0/ 0.83	NP	NS
lower tertile of number of adjustment factors	3	636/588423	1.19 (0.81, 1.75)	1.1 (0.79, 1.54)	0.568	0.04, 25.00	39 (0, 82)	0.807	0/ 0.79	NP	NS

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NS, not significant; PA, physical activity; RR, relative risk.

\* Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\* Random effects refer to summary risk ratio (95% CI) using the random-effects model.

# P-value of the summary random effects estimate.

† P-value from the Egger's regression asymmetry test.

‡ Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

§ P-value of the excess statistical significance test.

**Table S23: Subgroup analysis of physical activity and diffuse large B-cell lymphoma**

Variable	Number of studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P <sup>†</sup>	Excess significance			Evidence Grade
									O/E‡##	P-value§		
<b>Location</b>												
North America	5	1386/893125	0.89 (0.63, 1.27)	0.92 (0.76, 1.1)	0.353	0.68, 1.23	0 (0, 64)	0.048	0/	0.86	NP	NS
<b>Timing in life of PA</b>												
recent	6	1480/1236881	0.89 (0.63, 1.27)	0.96 (0.79, 1.16)	0.672	0.66, 1.39	14 (0, 66)	0.001	1/	0.95	1	NS
<b>Study quality score</b>												
Lower tertile of quality score	2	322/122565	1.01 (0.63, 1.64)	1.01 (0.72, 1.41)	0.972	NA	0 (NA)	NA	0/	0.1	NP	NS
Intermediate tertile of quality score	2	778/612708	0.89 (0.63, 1.27)	0.88 (0.69, 1.14)	0.328	NA	0 (NA)	NA	0/	0.45	NP	NS
Upper tertile of quality score	2	380/501608	0.89 (0.59, 1.35)	1.59 (0.43, 5.88)	0.492	NA	80 (NA)	NA	1/	0.29	0.27	NS
<b>Type of PA assessment</b>												
duration	2	441/279068	0.89 (0.59, 1.35)	0.93 (0.68, 1.28)	0.680	NA	0 (NA)	NA	0/	0.32	NP	NS
energy expenditure	2	602/148199	0.89 (0.63, 1.27)	0.93 (0.70, 1.23)	0.634	NA	0 (NA)	NA	0/	0.36	NP	NS
<b>Adjustment for smoking</b>												
no	4	759/932179	0.87 (0.61, 1.25)	1.06 (0.75, 1.52)	0.738	0.30, 3.70	45 (0, 80)	0.009	1/	0.73	0.55	NS
yes	2	721/304702	0.89 (0.63, 1.27)	0.89 (0.68, 1.16)	0.407	NA	0 (NA)	NA	0/	0.42	NP	NS
<b>Adjustment for adiposity</b>												
no	2	261/345105	1.01 (0.63, 1.64)	1.67 (0.52, 5.56)	0.389	NA	75 (NA)	NA	1/	0.1	0.1	NS
yes	4	1219/891776	0.89 (0.63, 1.27)	0.90 (0.74, 1.1)	0.306	0.59, 1.39	0 (0, 68)	0.1778	0/	0.74	NP	NS
<b>Adjustment for alcohol</b>												
no	4	759/932179	0.87 (0.61, 1.25)	1.06 (0.75, 1.52)	0.738	0.30, 3.70	45 (0, 80)	0.009	1/	0.73	0.55	NS
yes	2	721/304702	0.89 (0.63, 1.27)	0.89 (0.68, 1.16)	0.407	NA	0 (NA)	NA	0/	0.42	NP	NS
<b>Number of adjustment factors</b>												
lower tertile of number of adjustment factors	3	665/588423	0.87 (0.61, 1.25)	0.94 (0.74, 1.20)	0.619	0.19, 4.55	0 (0, 73)	0.052	0/	0.61	NP	NS
upper tertile of number of adjustment factors	2	721/304702	0.89 (0.63, 1.27)	0.89 (0.68, 1.16)	0.407	NA	0 (NA)	NA	0/	0.42	NP	NS

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NS, not significant; PA, physical activity; RR, relative risk.

\* Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\* Random effects refer to summary risk ratio (95% CI) using the random-effects model.

# P-value of the summary random effects estimate.

† P-value from the Egger's regression asymmetry test.

‡ Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

§ P-value of the excess statistical significance test.

**Table S24: Subgroup analysis of physical activity and distal colon cancer**

Variable	Number of studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P <sup>†</sup>	Excess significance		Evidence Grade
									O/E <sup>‡,##</sup>	P-value <sup>‡</sup>	
<b>Distal colon, inc</b>	21	10486/2487651	0.73 (0.63, 0.85)	0.74 (0.67, 0.81)	3.0E-10	0.59, 0.92	21 (0, 53)	0.338	8/13.45	NP	Strong
<b>Study design</b>											
Case-control	9	3950/50737	0.64 (0.5, 0.81)	0.68 (0.59, 0.78)	2.3E-08	0.57, 0.79	0 (0, 54)	0.223	3/6.96	NP	Strong
Cohort	12	6536/2436914	0.73 (0.63, 0.85)	0.78 (0.68, 0.88)	6.3E-05	0.58, 1.02	27 (0, 63)	0.983	5/8.38	NP	Suggestive
<b>Risk of bias</b>											
High risk	10	5028/1268754	0.73 (0.63, 0.85)	0.73 (0.65, 0.82)	9.5E-08	0.64, 0.84	0 (0, 53)	0.257	2 /5.45	NP	Strong
Low risk	11	5458/1218897	0.83 (0.69, 0.99)	0.74 (0.64, 0.85)	5.5E-05	0.51, 1.08	38 (0, 68)	0.832	6 /4.48	0.37	Suggestive
<b>PA domain</b>											
household	2	629/458950	1.01 (0.75, 1.35)	0.97 (0.75, 1.25)	8.0E-01	NA	NA	NA	0 /0.1	NP	NS
occupational	10	6830/1914405	0.73 (0.63, 0.85)	0.74 (0.61, 0.88)	1.3E-03	0.43, 1.23	53 (0, 76)	0.410	3 /7.04	NP	Weak
recreational	11	3557/1450950	0.83 (0.69, 0.99)	0.72 (0.63, 0.83)	3.5E-06	0.53, 0.98	26 (0, 63)	0.032	5 /4.23	0.76	Suggestive
2 or more PA domains	8	3328/560342	0.64 (0.5, 0.81)	0.74 (0.57, 0.96)	2.3E-02	0.36, 1.52	56 (0, 78)	0.941	3 /6.42	NP	Weak
<b>Definition of distal colon cancer<sup>§</sup></b>											
definition 1	11	5223/1874424	0.73 (0.63, 0.85)	0.71 (0.59, 0.86)	4.2E-04	0.43, 1.19	48 (0, 73)	0.526	5 /7.36	NP	Suggestive
definition 2	6	3903/567922	0.83 (0.69, 0.99)	0.75 (0.66, 0.85)	6.1E-06	0.63, 0.89	0 (0, 61)	0.565	2 /2.31	NP	Suggestive
definition 3	4	1360/45305	0.83 (0.57, 1.2)	0.76 (0.61, 0.93)	8.8E-03	0.48, 1.20	0 (0, 68)	0.844	1 /1.45	NP	Weak

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NS, not significant; PA, physical activity; RR, relative risk.

\*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\*Random effects refer to summary risk ratio (95% CI) using the random-effects model.

#P-value of the summary random effects estimate.

†P-value from the Egger's regression asymmetry test.

‡Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

‡P-value of the excess statistical significance test.

§Definition 1 = splenic flexure included as part of the proximal colon; Definition 2 = splenic flexure included as part of the distal colon; Definition 3 = splenic flexure not included in definition of the proximal colon or the distal colon.

**Table S25: Subgroup analysis of physical activity and endometrial cancer**

Variable	Number of studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P <sup>†</sup>	Excess significance		
									O/E <sup>‡,##</sup>	P-value <sup>‡</sup>	Evidence Grade
<b>Location</b>											
Asia	3	1057/28682	0.76 (0.50, 1.14)	0.68 (0.51, 0.93)	0.01308	0.1, 4.76	0 (0, 73)	0.884	1/ 1.49	NP	Weak
Europe	15	11111/1772107	0.76 (0.67, 0.85)	0.79 (0.69, 0.90)	0.00033	0.58, 1.08	33 (0, 63)	0.286	4/ 8.03	NP	Suggestive
North America	14	7305/417610	0.84 (0.69, 1.02)	0.82 (0.75, 0.89)	0.00001	0.71, 0.94	9 (0, 52)	0.179	3/ 6.47	NP	Suggestive
<b>Number of cases</b>											
<300	17	2396/208950	0.87 (0.60, 1.27)	0.68 (0.58, 0.81)	0.00001	0.49, 0.97	18 (0, 54)	0.194	5/ 2.35	0,07	Suggestive
>=300	16	17162/2010202	0.76 (0.67, 0.85)	0.83 (0.78, 0.88)	<0.00001	0.74, 0.92	8 (0, 50)	0.867	4/ 13.9	NP	Strong
<b>Number of participants</b>											
<3500	15	5164/19000	0.66 (0.50, 0.87)	0.74 (0.65, 0.83)	<0.000001	0.65, 0.84	0 (0, 46)	0.979	4/ 11.0	NP	Strong
>=3500	18	14394/2200152	0.76 (0.67, 0.85)	0.82 (0.75, 0.89)	0.00001	0.65, 1.03	34 (0, 62)	0.129	5/ 12.6	NP	Suggestive
<b>Quality score</b>											
Low	13	10764/1580729	0.76 (0.67, 0.85)	0.79 (0.73, 0.86)	<0.000001	0.70, 0.89	5 (0, 51)	0.633	4/ 6.52	NP	Strong
High	20	8794/638423	0.77 (0.63, 0.95)	0.79 (0.71, 0.88)	<0.00001	0.60, 1.05	31 (0, 59)	0.001	5/ 13.2	NP	Suggestive
<b>Adjustment for adiposity</b>											
no	9	9108/1516658	0.76 (0.67, 0.85)	0.83 (0.72, 0.96)	0.00997	0.60, 1.15	38 (0, 70)	0.947	3/ 4.65	NP	Weak
yes	24	10450/702494	0.84 (0.69, 1.02)	0.78 (0.71, 0.85)	<0.00001	0.65, 0.93	13 (0, 47)	0.016	6/ 9.37	NP	Suggestive
<b>Adjustment for parity</b>											
no	9	7820/1175233	0.76 (0.67, 0.85)	0.81 (0.71, 0.93)	0.00272	0.61, 1.10	31 (0, 68)	0.984	3/ 4.89	NP	Weak
yes	24	11738/1043919	0.9 (0.8, 1.10)	0.79 (0.72, 0.85)	0.00000	0.64, 0.97	20 (0, 51)	0.007	6/ 4.84	0,61	Suggestive
<b>Adjustment for OC use</b>											
no	19	12539/1729048	0.76 (0.67, 0.85)	0.81 (0.74, 0.89)	0.00002	0.64, 1.02	27 (0, 57)	0.226	4/ 10.30	NP	Suggestive
yes	14	7019/490104	0.77 (0.63, 0.95)	0.78 (0.69, 0.86)	<0.00001	0.63, 0.95	15 (0, 55)	0.183	5/ 9.56	NP	Suggestive
<b>Adjustment for HRT use</b>											
no	18	12791/1668084	0.76 (0.67, 0.85)	0.80 (0.72, 0.89)	0.00004	0.61, 1.05	35 (0, 62)	0.353	5/ 9.96	NP	Suggestive
yes	15	6767/551068	0.77 (0.63, 0.95)	0.79 (0.72, 0.87)	<0.00001	0.71, 0.88	0 (0, 46)	0.027	4/ 9.89	NP	Highly suggestive
<b>PA intensity</b>											
high	8	4300/281708	0.76 (0.63, 0.92)	0.81 (0.70, 0.94)	0.00570	0.57, 1.15	34 (0, 70)	0.955	3/ 6.08	NP	Weak
moderate	8	4078/229188	0.84 (0.69, 1.02)	0.83 (0.71, 0.95)	0.01068	0.56, 1.22	46 (0, 74)	0.301	3/ 3.68	NP	Weak
light	2	1364/3507	0.68 (0.48, 0.97)	0.65 (0.49, 0.85)	0.00194		0 (NA)	NA	2/ 1.98	1	Weak
<b>PA domain</b>											
household	7	3386/292453	0.67 (0.64, 0.96)	0.70 (0.52, 0.95)	0.02248	0.27, 1.85	80 (53, 89)	0.552	3/ 6.45	NP	Weak
occupational	19	14208/1858142	0.76 (0.67, 0.85)	0.81 (0.76, 0.88)	<0.00001	0.75, 0.88	0 (0, 43)	0.818	4/ 11,1	NP	Strong
recreational	21	9539/631734	0.84 (0.69, 1.02)	0.85 (0.79, 0.91)	0.00001	0.79, 0.92	0 (0, 41)	0.041	3/ 8.64	NP	Suggestive
walking	10	4623/254287	0.64 (0.47, 0.87)	0.82 (0.69, 0.97)	0.01983	0.53, 1.27	38 (0, 69)	0.818	2/ 9.51	NP	Weak
<b>MET-h/week categories</b>											
3 to 8 MET-h/week	3	2182/74578	1.08 (0.88, 1.33)	0.94 (0.74, 1.19)	0.61471	0.09, 10.00	40 (0, 82)	0.260	0/ 0.46	NP	NS
9 to 20 MET-h/week	2	1515/73249	0.77 (0.60, 0.98)	0.79 (0.65, 0.98)	0.02984		0 (NA)	NA	1/ 1.80	NP	Weak
>20 MET-h/week	3	1779/105891	0.92 (0.70, 1.20)	0.87 (0.71, 1.05)	0.15264	0.25, 3.03	0 (0, 73)	0.307	0/ 0.50	NP	NS

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NS, not significant; PA, physical activity; RR, relative risk; OC, oral contraceptive; HRT, hormone replacement therapy; MET-h/week, metabolic units per hour/week

\* Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\* Random effects refer to summary risk ratio (95% CI) using the random-effects model.

# P-value of the summary random effects estimate.

† P-value from the Egger's regression asymmetry test.

‡ Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

\* P-value of the excess statistical significance test.

**Table S26: Subgroup analysis of physical activity and esophageal cancer**

Variable	Number of studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P <sup>†</sup>	Excess significance			Evidence Grade									
									O/E <sup>‡,##</sup>	P-value <sup>‡</sup>											
<b>Esophageal cancer incidence</b>																					
<b>Cancer subsite</b>																					
Esophageal adenocarcinoma	4	965/911529	0.81 (0.58, 1.12)	0.79 (0.65, 0.95)	0.012	0.52, 1.19	0 (0, 68)	0.167	0/	1.60	NP	Weak									
Esophageal cancer, subsite unspecified	3	629/462742	0.84 (0.66, 1.06)	0.82 (0.54, 1.23)	0.337	0.01, 50.00	53 (0, 85)	0.948	1/	0.83	1	NS									
Esophageal squamous cell carcinoma	5	1444/492864	0.65 (0.47, 0.91)	1.09 (0.45, 2.63)	0.844	0.04, 33.33	94 (89, 96)	0.801	3/	3.94	NP	NS									
<b>Location</b>																					
Australia	2	544/3558	0.81 (0.58, 1.12)	0.72 (0.57, 0.92)	0.007	NA	0 (NA)	NA	1/	0.84	1	Weak									
North America	5	1071/994785	0.76 (0.54, 1.06)	0.8 (0.63, 1.02)	0.071	0.44, 1.45	27 (0, 73)	0.438	1/	2.83	NP	NS									
Asia	2	996/447329	0.84 (0.66, 1.06)	2.17 (0.33, 14.3)	0.421	NA	98 (NA)	NA	1/	0.95	1	NS									
Middle East	2	347/1014	0.43 (0.24, 0.76)	0.62 (0.29, 1.32)	0.214	NA	66 (NA)	NA	1/	1.75	NP	NS									
<b>Timing in life of PA</b>																					
recent	9	2427/1864090	0.84 (0.66, 1.06)	1.09 (0.74, 1.61)	0.667	0.28, 4.35	87 (78, 92)	0.297	2/	2.78	NP	NS									
consistent	2	311/2174	0.76 (0.54, 1.06)	0.68 (0.51, 0.93)	0.013	NA	3 (NA)	NA	1/	0.85	1	Weak									
<b>Quality score</b>																					
Lower	4	891/4572	0.81 (0.58, 1.12)	0.68 (0.53, 0.89)	0.005	0.28, 1.67	33 (0, 77)	0.782	2/	1.32	0.6	Weak									
intermediate	3	1208/448871	0.84 (0.66, 1.06)	1.49 (0.54, 4.17)	0.436	0.01, 100	96 (93, 98)	0.400	1/	1.21	NP	NS									
Upper	4	702/1396545	0.75 (0.53, 1.06)	0.79 (0.6, 1.02)	0.076	0.37, 1.64	15 (0, 72)	0.819	1/	1.96	NP	NS									
<b>Adjustment for smoking</b>																					
no	2	544/3558	0.81 (0.58, 1.12)	0.72 (0.57, 0.92)	0.007	NA	0 (NA)	NA	1/	0.84	1	Weak									
yes	10	2494/1863577	0.84 (0.66, 1.06)	0.98 (0.65, 1.47)	0.916	0.23, 4.17	87 (78, 91)	0.660	3	2.83	1	NS									
<b>Adjustment for adiposity</b>																					
no	4	1484/23071	0.81 (0.58, 1.12)	1.43 (0.55, 3.7)	0.468	0.02, 100	95 (90, 97)	0.447	2/	2.01	NP	NS									
yes	8	1554/1844064	0.84 (0.66, 1.06)	0.77 (0.65, 0.91)	0.002	0.56, 1.05	17 (0, 63)	0.615	2	1.95	1	Weak									
<b>Adjustment for alcohol</b>																					
no	6	1340/23261	0.81 (0.58, 1.12)	0.74 (0.59, 0.93)	0.009	0.43, 1.28	35 (0, 73)	0.635	2/	2.09	NP	Weak									
yes	6	1698/1843874	0.84 (0.66, 1.06)	1.12 (0.62, 2.04)	0.712	0.13, 9.09	92 (85, 95)	0.602	2	1.91	1	NS									

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NS, not significant; PA, physical activity; RR, relative risk;

\*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\* Random effects refer to summary risk ratio (95% CI) using the random-effects model.

# P-value of the summary random effects estimate.

† P-value from the Egger's regression asymmetry test.

‡ Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

§ P-value of the excess statistical significance test.

**Table S27: Subgroup analysis of physical activity and follicular lymphoma**

Variable	Number of studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P <sup>†</sup>	Excess significance		Evidence Grade
									O/E <sup>‡##</sup>	P-value <sup>‡</sup>	
<b>Location</b>											
North America	5	1085/893125	0.82 (0.54, 1.25)	0.98 (0.8, 1.19)	0.822	0.71, 1.35	0 (0, 64)	0.730	0/ 1.79	NP	NS
<b>Timing in life of PA</b>											
recent	6	1179/1236881	0.82 (0.54, 1.25)	1.01 (0.83, 1.22)	0.946	0.76, 1.33	0 (0, 61)	0.076	0/ 1.98	NP	NS
<b>Study quality score</b>											
Lower tertile of quality score	2	343/122565	0.93 (0.61, 1.43)	0.96 (0.68, 1.35)	0.806	NA	0 (NA)	NA	0/ 0.16	NP	NS
Intermediate tertile of quality score	2	537/612708	0.82 (0.54, 1.25)	0.88 (0.66, 1.19)	0.424	NA	0 (NA)	NA	0/ 0.88	NP	NS
Upper tertile of quality score	2	299/501608	1.25 (0.81, 1.92)	1.52 (0.79, 2.94)	0.212	NA	33 (NA)	NA	0/ 0.65	NP	NS
<b>Type of PA assessment</b>											
duration	2	326/279068	1.25 (0.81, 1.92)	1.15 (0.82, 1.64)	0.414	NA	0 (NA)	NA	0/ 0.70	NP	NS
energy expenditure	2	502/148199	0.82 (0.54, 1.25)	0.87 (0.65, 1.18)	0.367	NA	0 (NA)	NA	0/ 0.78	NP	NS
<b>Adjustment for smoking</b>											
no	4	694/932179	0.96 (0.63, 1.47)	1.01 (0.78, 1.32)	0.938	0.57, 1.79	0 (0, 68)	0.036	0/ 0.24	NP	NS
yes	2	485/304702	0.82 (0.54, 1.25)	1.01 (0.67, 1.52)	0.975	NA	47 (NA)	NA	0/ 0.81	NP	NS
<b>Adjustment for adiposity</b>											
no	2	316/345105	0.93 (0.61, 1.43)	1.37 (0.51, 3.7)	0.532	NA	65 (NA)	NA	0/ 0.15	NP	NS
yes	4	863/891776	0.82 (0.54, 1.25)	0.99 (0.79, 1.23)	0.938	0.6, 1.61	0 (0, 68)	0.815	0/ 1.47	NP	NS
<b>Adjustment for alcohol</b>											
no	4	694/932179	0.96 (0.63, 1.47)	1.01 (0.78, 1.32)	0.938	0.57, 1.79	0 (0, 68)	0.036	0/ 0.24	NP	NS
yes	2	485/304702	0.82 (0.54, 1.25)	1.01 (0.67, 1.52)	0.975	NA	47 (NA)	NA	0/ 0.81	NP	NS
<b>Number of adjustment factors</b>											
lower tertile of number of adjustment factors	3	600/588423	0.96 (0.63, 1.47)	0.96 (0.74, 1.25)	0.756	0.17, 5.26	0 (0, 73)	0.318	0/ 0.18	NP	NS
upper tertile of number of adjustment factors	2	485/304702	0.82 (0.54, 1.25)	1.01 (0.67, 1.52)	0.975	NA	47 (NA)	NA	0/ 0.81	NP	NS

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NS, not significant; PA, physical activity; RR, relative risk;

\*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\* Random effects refer to summary risk ratio (95% CI) using the random-effects model.

#P-value of the summary random effects estimate.

† P-value from the Egger's regression asymmetry test.

‡ Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

‡ P-value of the excess statistical significance test.

**Table S28: Subgroup analysis of physical activity and gastric cancer**

Variable	Number of studies	Number of cases/Sample size	Largest study, RR (95% CI)*	Random Effects, RR (95% CI)**	Random Effects, P#	95% Prediction Interval	I <sup>2</sup> (95% CI)	Excess significance			Evidence Grade
								Egger's P†	O/E‡,##	P-value*	
<b>Gastric cancer incidence</b>											
Gastric cancer, overall	15	10194/1429316	0.91 (0.85, 0.97)	0.83 (0.75, 0.94)	0.003	0.59, 1.18	60 (18, 76)	0.732	7/ 3.35	0.05	Weak
<b>Cancer Subsite</b>											
Gastric cancer, cardia	4	1131/911306	0.83 (0.58, 1.19)	0.80 (0.64, 1.01)	0.056	0.49, 1.32	0 (0, 68)	0.908	0/ 1.54	NP	NS
Gastric cancer, non-cardia	5	1842/984821	0.62 (0.44, 0.87)	0.63 (0.52, 0.75)	0.001	0.46, 0.85	0 (0, 64)	0.178	3/ 4.99	NP	Strong
<b>Location</b>											
Asia	7	6430/502299	0.91 (0.85, 0.97)	0.83 (0.75, 0.93)	<0.001	0.66, 1.05	36 (0, 72)	0.324	3/ 1.93	0.40	Suggestive
Canada/USA	5	2899/504716	0.71 (0.56, 0.91)	0.81 (0.64, 1.04)	0.108	0.35, 1.89	68 (0, 85)	0.421	2/ 4.36	NP	NS
Europe	4	1178/495434	0.69 (0.50, 0.95)	0.90 (0.50, 1.64)	0.742	0.06, 12.5	81 (25, 91)	0.639	3/ 3.22	NP	NS
<b>Published data</b>											
no	2	472/3983	2.13 (1.22, 3.70)	1.39 (0.60, 3.23)	0.441	NA	77 (NA)	NA	1/ 1.98	NP	NS
yes	14	10035/1498466	0.91 (0.85, 0.97)	0.79 (0.71, 0.88)	<0.001	0.59, 1.08	54 (0, 73)	0.1497169	7/ 3.28	0.03	Suggestive
<b>Gastric cancer mortality</b>											
Gastric cancer, overall	2	671/20604	0.69 (0.57, 0.83)	0.68 (0.57, 0.82)	<0.001	NA	0 (NA)	NA	1/ 1.54	NP	Weak
<b>Published data</b>											
yes	2	671/20604	0.69 (0.57, 0.83)	0.68 (0.57, 0.82)	<0.001	NA	0 (NA)	NA	1/ 1.54	NP	Weak
<b>Gastric cancer incidence and mortality</b>											
Gastric cancer, overall	4	2176/97587	0.93 (0.77, 1.14)	0.92 (0.76, 1.10)	0.349	0.61, 1.37	0 (0, 68)	0.324	0/ 0.61	NP	NS
<b>Location</b>											
Europe	2	680/17706	0.6 (0.14, 2.50)	0.43 (0.15, 1.27)	0.127	NA	0 (NA)	NA	0/ 1.58	NP	NS
<b>Published data</b>											
yes	4	2176/97587	0.93 (0.77, 1.14)	0.92 (0.76, 1.1)	0.349	0.61, 1.37	0 (0, 68)	0.324	0/ 0.61	NP	NS

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NS, not significant; PA, physical activity; RR, relative risk;

\* Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\* Random effects refer to summary risk ratio (95% CI) using the random-effects model.

# P-value of the summary random effects estimate.

† P-value from the Egger's regression asymmetry test.

‡ Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

\* P-value of the excess statistical significance test

**Table S29: Subgroup analysis of physical activity and Hodgkin lymphoma**

Variable	Number of studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P <sup>†</sup>	Excess significance			
									O/E <sup>‡,##</sup>	P-value <sup>‡</sup>	Evidence Grade	
<b>Location</b>												
North America	4	349/523730	0.56 (0.37, 0.86)	0.82 (0.53, 1.27)	0.376	0.16, 4.17	48 (0, 81)	0.088	1/	2.84	NP	NS
<b>Timing in life of PA</b>												
past	3	109/59700	0.73 (0.38, 1.39)	0.87 (0.55, 1.39)	0.561	0.04, 16.67	0 (0, 73)	0.281	0/	0.53	NP	NS
recent	2	243/466299	0.56 (0.37, 0.86)	0.89 (0.32, 2.5)	0.831	NA	81 (NA)	NA	1/	1.58	NP	NS
<b>Study quality score</b>												
Lower tertile of quality score	2	55/58952	0.73 (0.38, 1.39)	0.82 (0.46, 1.47)	0.502	NA	0 (NA)	NA	0/	0.30	NP	NS
Intermediate tertile of quality score	2	243/466299	0.56 (0.37, 0.86)	0.89 (0.32, 2.5)	0.831	NA	81 (NA)	NA	1/	1.58	NP	NS
<b>Type of PA assessment</b>												
frequency	3	297/467047	0.56 (0.37, 0.86)	0.88 (0.47, 1.67)	0.716	0.01, 100	65 (0, 88)	0.207	1/	2.20	NP	NS
<b>Adjustment for smoking</b>												
no	3	111/524810	0.73 (0.38, 1.39)	1.05 (0.62, 1.79)	0.838	0.01, 100	17 (0, 77)	0.634	0/	0.56	NP	NS
yes	2	241/1189	0.56 (0.37, 0.86)	0.67 (0.4, 1.11)	0.118	NA	34 (NA)	NA	1/	1.53	NP	NS
<b>Adjustment for adiposity</b>												
no	3	242/59393	0.56 (0.37, 0.86)	0.64 (0.45, 0.9)	0.010	0.07, 5.88	0 (0, 73)	0.060	1/	1.63	NP	Weak
yes	2	110/466606	0.97 (0.45, 2.08)	1.23 (0.71, 2.13)	0.456	NA	0 (NA)	NA	0/	0.10	NP	NS
<b>Adjustment for alcohol</b>												
no	5	352/525999	0.56 (0.37, 0.86)	0.85 (0.56, 1.27)	0.408	0.28, 2.56	38 (0, 76)	0.080	1/	2.92	NP	NS
<b>Number of adjustment factors</b>												
lower tertile of number of adjustment factors	2	55/58952	0.73 (0.38, 1.39)	0.82 (0.46, 1.47)	0.502	NA	0 (NA)	NA	0/	0.30	NP	NS
Intermediate tertile of number of adjustment factors	2	110/466606	0.97 (0.45, 2.08)	1.23 (0.71, 2.13)	0.456	NA	0 (NA)	NA	0/	0.10	NP	NS

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NS, not significant; PA, physical activity; RR, relative risk;

\* Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\* Random effects refer to summary risk ratio (95% CI) using the random-effects model.

# P-value of the summary random effects estimate.

† P-value from the Egger's regression asymmetry test.

‡ Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

‡ P-value of the excess statistical significance test

**Table S30: Subgroup analysis of physical activity and leukemia**

Variable	Number of studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P <sup>†</sup>	Excess significance			Evidence Grade
									O/E <sup>‡,##</sup>	P-value <sup>‡</sup>		
<b>Location</b>												
Europe	2	49/16837	1.08 (0.78, 1.45)	0.86 (0.44, 1.69)	0.662	NA	52 (NA)	NA	0/	0.11	NP	NS
North America	6	1687/1099872	1.15 (0.88, 1.47)	0.97 (0.83, 1.15)	0.720	0.7, 1.35	17 (0, 67)	0.262	1/	1.36	NP	NS
<b>Timing in life of PA</b>												
past	3	130/73520	1.08 (0.78, 1.45)	0.94 (0.68, 1.3)	0.724	0.07, 12.5	14 (0, 77)	0.111	0/	0.18	NP	NS
recent	5	1606/1043189	1.15 (0.88, 1.47)	0.97 (0.81, 1.18)	0.771	0.6, 1.56	31 (0, 74)	0.351	1/	1.26	NP	NS
<b>Study quality score</b>												
Lower tertile of quality score	4	506/90667	1.08 (0.78, 1.45)	0.95 (0.76, 1.19)	0.677	0.58, 1.56	0 (0, 68)	0.032	0/	0.31	NP	NS
Intermediate tertile of quality score	2	714/41691	1.15 (0.88, 1.47)	1.11 (0.88, 1.41)	0.386	NA	0 (NA)	NA	0/	0.5	NP	NS
Upper tertile of quality score	2	516/984351	1.09 (0.84, 1.41)	0.88 (0.57, 1.37)	0.591	NA	75 (NA)	NA	1/	0.24	0.22	NS
<b>Type of PA assessment</b>												
duration	2	457/73830	0.9 (0.6, 1.41)	0.88 (0.62, 1.25)	0.479	NA	0 (NA)	NA	0/	0.28	NP	NS
frequency	2	516/984351	1.09 (0.84, 1.41)	0.88 (0.57, 1.37)	0.591	NA	75 (NA)	NA	1/	0.24	0.22	NS
qualitative	3	110/54769	1.08 (0.78, 1.45)	0.98 (0.72, 1.32)	0.872	0.11, 9.09	7 (0, 75)	0.227	0/	0.17	NP	NS
<b>Adjustment for smoking</b>												
no	5	844/115211	1.15 (0.88, 1.47)	1.05 (0.88, 1.25)	0.600	0.79, 1.41	0 (0, 64)	0.010	0/	0.74	NP	NS
yes	3	892/1001498	1.09 (0.84, 1.41)	0.9 (0.68, 1.19)	0.454	0.05, 14.29	50 (0, 84)	0.539	1/	0.39	0.4	NS
<b>Adjustment for adiposity</b>												
no	6	905/619762	1.09 (0.84, 1.41)	1 (0.85, 1.18)	0.967	0.79, 1.27	0 (0, 61)	0.007	0/	0.54	NP	NS
yes	2	831/496947	1.15 (0.88, 1.47)	0.91 (0.56, 1.47)	0.699	NA	80 (NA)	NA	1/	0.59	0.5	NS
<b>Adjustment for alcohol</b>												
no	8	1736/1116709	1.15 (0.88, 1.47)	0.98 (0.85, 1.12)	0.749	0.75, 1.27	14 (0, 62)	0.068	1/	1.49	NP	NS
<b>Number of adjustment factors</b>												
lower tertile of number of adjustment factors	3	758/522878	1.09 (0.84, 1.41)	1.05 (0.88, 1.25)	0.597	0.33, 3.33	0 (0, 73)	0.212	0/	0.35	NP	NS
Intermediate tertile of number of adjustment factors	3	147/96884	0.84 (0.45, 1.59)	0.79 (0.53, 1.19)	0.269	0.06, 11.11	0 (0, 73)	0.174	0/	0.31	NP	NS
upper tertile of number of adjustment factors	2	831/496947	1.15 (0.88, 1.47)	0.91 (0.56, 1.47)	0.700	NA	80 (NA)	NA	1/	0.59	0.5	NS

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NS, not significant; PA, physical activity; RR, relative risk;

\* Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\* Random effects refer to summary risk ratio (95% CI) using the random-effects model.

# P-value of the summary random effects estimate.

† P-value from the Egger's regression asymmetry test.

‡ Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

§ P-value of the excess statistical significance test

**Table S31: Subgroup analysis of physical activity and lung cancer**

Variable	Number of studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P <sup>†</sup>	Excess significance			Evidence Grade
									O/E <sup>‡,##</sup>	P-value <sup>‡</sup>		
<b>Location</b>												
Asia	4	3730/577333	0.83 (0.75, 0.92)	0.68 (0.50, 0.93)	0.017	0.16, 2.86	91 (79, 95)	0.623	3/	2.81	1	Weak
Canada	2	2985/6624	0.73 (0.60, 0.89)	0.93 (0.56, 1.54)	0.793	NA	89 (NA)	NA	1/	1.88	NP	NS
Europe	12	5772/974968	1.00 (0.93, 1.09)	0.74 (0.59, 0.93)	0.008	0.32, 1.69	93 (91, 95)	0.234	4/	0.60	0	Weak
USA	9	9311/647670	0.78 (0.72, 0.85)	0.83 (0.75, 0.93)	<0.001	0.63, 1.1	53 (0, 76)	0.884	4/	5.42	NP	Suggestive
<b>Timing in life of PA</b>												
2+ years	6	4223/388042	0.30 (0.25, 0.36)	0.60 (0.39, 0.93)	0.024	0.12, 2.94	94 (90, 96)	0.511	4/	6.00	NP	Weak
lifetime	8	4998/954093	0.83 (0.75, 0.92)	0.87 (0.78, 0.97)	0.017	0.66, 1.15	39 (0, 72)	0.393	3/	4.26	NP	Weak
past year	12	11179/812356	1.00 (0.93, 1.09)	0.85 (0.76, 0.93)	0.001	0.61, 1.18	77 (56, 85)	0.159	4/	0.60	0	Weak
<b>Smoking status</b>												
former	2	1271/449794	0.82 (0.66, 1.02)	0.79 (0.65, 0.97)	0.026	NA	0 (NA)	NA	0/	1.12	NP	Weak
never	4	2943/204640	0.94 (0.69, 1.28)	0.96 (0.78, 1.2-)	0.745	0.55, 1.69	9 (0, 71)	0.840	0/	0.49	NP	NS
<b>Confirmatory cases</b>												
Cancer Registry	11	6048/1033803	1.00 (0.93, 1.09)	0.68 (0.54, 0.85)	0.001	0.29, 1.59	94 (92, 96)	0.199	6/	0.55	0	Weak
Multiple Methods	11	13415/1149588	0.78 (0.72, 0.85)	0.83 (0.75, 0.93)	0.001	0.58, 1.18	74 (45, 84)	0.586	5/	8.12	NP	Weak
Pathology	5	2335/23204	1.22 (0.93, 1.61)	0.87 (0.68, 1.11)	0.263	0.40, 1.89	59 (0, 83)	0.831	1/	1.96	NP	NS
<b>Median age</b>												
50-60	16	7452/691868	1.00 (0.93, 1.09)	0.86 (0.78, 0.94)	0.002	0.62, 1.19	67 (38, 79)	0.036	5/	0.80	0	Weak
<50	7	6620/968479	0.83 (0.75, 0.92)	0.64 (0.47, 0.88)	0.005	0.22, 1.89	96 (94, 97)	0.423	5/	4.91	1	Weak
>60	4	7726/546248	0.78 (0.72, 0.85)	0.79 (0.72, 0.87)	7.2224E-07	0.61, 1.02	10 (0, 71)	0.952	2/	2.52	NP	Highly suggestive

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NS, not significant; PA, physical activity; RR, relative risk;

\* Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\* Random effects refer to summary risk ratio (95% CI) using the random-effects model.

# P-value of the summary random effects estimate.

† P-value from the Egger's regression asymmetry test.

‡ Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

‡ P-value of the excess statistical significance test

**Table S32: Subgroup analysis of physical activity and multiple myeloma**

Variable	Number of studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P <sup>†</sup>	Excess significance			Evidence Grade
									O/E <sup>‡,##</sup>	P-value <sup>‡</sup>		
<b>Location</b>												
Europe	2	172/346025	1.39 (0.56, 2.86)	0.92 (0.34, 2.44)	0.867	NA	48 (NA)	NA	0/	0,72	NP	NS
North America	4	1124/805605	1.19 (0.93, 1.52)	0.93 (0.71, 1.20)	0.546	0.36, 2.38	43 (0, 80)	0.119	0/	1,4	NP	NS
<b>Timing in life of PA</b>												
recent	5	1140/1122436	1.19 (0.93, 1.52)	0.81 (0.57, 1.15)	0.237	0.27, 2.44	62 (0, 83)	0.104	1/	1,46	NP	NS
<b>Study quality score</b>												
Lower tertile of quality score	3	168/149050	0.88 (0.51, 1.49)	0.80 (0.47, 1.39)	0.427	0, 100	57 (0, 86)	0.485	1/	0,25	0,23	NS
Intermediate tertile of quality score	2	814/631899	1.19 (0.93, 1.52)	1.00 (0.68, 1.49)	0.100	NA	65 (NA)	NA	0/	0,96	NP	NS
Upper tertile of quality score	2	380/480379	0.71 (0.44, 1.15)	0.68 (0.44, 1.06)	0.089	NA	0 (NA)	NA	0/	1,44	NP	NS
<b>Type of PA assessment</b>												
duration	2	281/246321	0.71 (0.44, 1.15)	0.61 (0.43, 0.88)	0.007	NA	0 (NA)	NA	1/	1,11	NP	Weak
qualitative	3	267/383108	0.88 (0.51, 1.49)	0.93 (0.61, 1.41)	0.725	0.06, 14.29	1 (0, 73)	0.807	0/	0,31	NP	NS
<b>Adjustment for smoking</b>												
no	6	1019/1114478	1.19 (0.93, 1.52)	0.84 (0.60, 1.18)	0.323	0.32, 2.22	58 (0, 81)	0.238	1/	1,38	NP	NS
<b>Adjustment for adiposity</b>												
no	4	333/492806	0.88 (0.51, 1.49)	0.75 (0.47, 1.19)	0.222	0.15, 3.85	41 (0, 80)	0.882	1/	0,4	0,34	NS
yes	3	1029/768522	1.19 (0.93, 1.52)	0.92 (0.65, 1.28)	0.608	0.02, 33.33	60 (0, 87)	0.0791	0/	1,24	NP	NS
<b>Adjustment for alcohol</b>												
no	6	1019/1114478	1.19 (0.93, 1.52)	0.84 (0.6, 1.18)	0.323	0.32, 2.22	58 (0, 81)	0.238	1/	1,38	NP	NS
<b>Number of adjustment factors</b>												
lower tertile of number of adjustment factors	3	168/149050	0.88 (0.51, 1.49)	0.80 (0.47, 1.39)	0.427	0.01, 100	57 (0, 86)	0.485	1/	0,25	0,23	NS
Intermediate tertile of number of adjustment factors	2	686/621672	1.19 (0.93, 1.52)	0.96 (0.59, 1.56)	0.874	NA	71 (NA)	NA	0/	0,82	NP	NS
upper tertile of number of adjustment factors	2	508/490606	0.79 (0.53, 1.18)	0.76 (0.52, 1.10)	0.147	NA	0 (NA)	NA	0/	1,05	NP	NS

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NS, not significant; PA, physical activity; RR, relative risk;

\*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\* Random effects refer to summary risk ratio (95% CI) using the random-effects model.

#P-value of the summary random effects estimate.

†P-value from the Egger's regression asymmetry test.

‡Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

‡ P-value of the excess statistical significance test

**Table S33: Subgroup analysis of physical activity and multiple cancer sites**

Variable	Number of studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P <sup>†</sup>	Excess significance			Evidence Grade
									O/E <sup>‡,##</sup>	P-value <sup>‡</sup>		
<b>Location</b>												
America	7	5575/11627	1.11 (0.88, 1.41)	0.94 (0.75, 1.19)	0.629	0.45, 1.96	75 (34, 87)	0.780	3/	1.55	0.19	NS
Asia	6	6668/85447	0.89 (0.73, 1.09)	0.78 (0.66, 0.91)	0.002	0.50, 1.20	48 (0, 78)	0.671	2/	2.17	NP	Weak
Europe	17	21369/2638245	0.88 (0.81, 0.95)	0.93 (0.83, 1.06)	0.293	0.6, 1.45	70 (47, 81)	0.925	5/	6.99	NP	NS
<b>Number of cases</b>												
<500	13	3929/927992	0.97 (0.74, 1.28)	0.75 (0.55, 1.02)	0.067	0.23, 2.44	85 (76, 90)	0.206	4/	0.74	0.01	NS
≥500	18	30020/1808349	0.88 (0.81, 0.95)	0.91 (0.83, 1.00)	0.058	0.63, 1.32	69 (45, 80)	0.879	7/	9.4	NP	NS
<b>Type of PA assessment</b>												
duration	11	11954/1026213	0.97 (0.81, 1.15)	0.85 (0.74, 0.97)	0.017	0.57, 1.27	55 (0, 76)	0.190	3/	0.82	0.04	Weak
energy expenditure	16	20871/1707237	0.88 (0.81, 0.95)	0.90 (0.78, 1.05)	0.192	0.50, 1.64	83 (74, 88)	0.981	7/	6.76	1	NS
qualitative	3	824/1991	1.23 (0.92, 1.64)	0.61 (0.21, 1.75)	0.355	0.01, 100	92 (76, 96)	0.467	1/	0.88	1	NS
<b>Adjustment for adiposity</b>												
no	8	5288/425006	0.89 (0.73, 1.09)	0.93 (0.79, 1.12)	0.488	0.58, 1.52	51 (0, 76)	0.435	1/	2.13	NP	NS
yes	23	28661/2311335	0.88 (0.81, 0.95)	0.83 (0.73, 0.95)	0.006	0.47, 1.47	82 (74, 87)	0.232	10/	9.31	0.83	Weak
<b>Quantification of PA</b>												
Increment per 1 hours/week	8	8091/61634	0.99 (0.99, 0.99)	0.99 (0.98, 1.00)	0.009	0.96, 1.02	70 (9, 84)	0.333	3/	0.42	0.01	Weak
Increment in 10 METs-h/week	16	24065/1796868	0.99 (0.98, 1.00)	0.98 (0.97, 1.00)	0.025	0.93, 1.04	81 (70, 87)	0.691	7/	0.87	0	Weak

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NS, not significant; PA, physical activity; RR, relative risk;

\* Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\* Random effects refer to summary risk ratio (95% CI) using the random-effects model.

# P-value of the summary random effects estimate.

† P-value from the Egger's regression asymmetry test.

‡ Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

‡ P-value of the excess statistical significance test

**Table S34: Subgroup analysis of physical activity and Non-Hodgkin lymphoma**

Variable	Number of studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P <sup>†</sup>	Excess significance		
									O/E <sup>‡,##</sup>	P-value <sup>‡</sup>	Evidence Grande
<b>Location</b>											
Europe	2	781/346025	1.16 (0.63, 2.17)	1.02 (0.62, 1.69)	0.925	NA	0 (NA)	NA	0/	0.72	NP
North America	12	9529/1015345	0.86 (0.74, 1.02)	0.92 (0.83, 1.00)	0.054	0.75, 1.12	27 (0, 63)	0.914	1/	5.76	NP
<b>Timing in life of PA</b>											
past	4	559/97632	0.83 (0.59, 1.11)	0.89 (0.70, 1.12)	0.336	0.45, 1.75	15 (0, 73)	0.661	0/	0.83	NP
recent	10	9751/1263738	0.86 (0.74, 1.02)	0.93 (0.84, 1.01)	0.096	0.75, 1.14	26 (0, 64)	0.638	1/	5.84	NP
<b>Study quality score</b>											
Lower tertile of quality score	6	3051/83022	1.05 (0.81, 1.37)	0.93 (0.79, 1.09)	0.338	0.74, 1.15	0 (0, 61)	0.070	0/	0.48	NP
Intermediate tertile of quality score	4	4168/771856	0.86 (0.74, 1.02)	0.93 (0.83, 1.04)	0.209	0.7, 1.23	9 (0, 71)	0.788	0/	2.53	NP
Upper tertile of quality score	4	3091/506492	0.97 (0.79, 1.20)	0.93 (0.72, 1.20)	0.578	0.33, 2.63	65 (0, 86)	0.440	1/	0.29	0.26
<b>Type of PA assessment</b>											
duration	4	2193/352898	0.97 (0.79, 1.20)	0.94 (0.79, 1.12)	0.514	0.55, 1.61	24 (0, 75)	0.202	0/	0.27	NP
energy_expenditure	6	6304/501665	0.86 (0.74, 1.02)	0.88 (0.76, 1.02)	0.103	0.61, 1.28	38 (0, 74)	0.450	1/	3.36	NP
frequency	2	1555/466606	0.97 (0.81, 1.16)	1.01 (0.85, 1.18)	0.945	NA	0 (NA)	NA	0/	0.15	NP
qualitative	2	258/40201	0.83 (0.59, 1.11)	0.83 (0.61, 1.11)	0.203	NA	0 (NA)	NA	0/	0.43	NP
<b>Adjustment for smoking</b>											
no	9	5530/1034637	0.97 (0.81, 1.16)	0.97 (0.88, 1.08)	0.616	0.86, 1.10	0 (0, 54)	0.284	0/	0.6	NP
yes	5	4780/326733	0.86 (0.74, 1.02)	0.87 (0.75, 1.01)	0.073	0.55, 1.37	49 (0, 79)	0.7013	1/	2.89	NP
<b>Adjustment for adiposity</b>											
no	7	3620/463846	1.05 (0.81, 1.37)	0.93 (0.80, 1.06)	0.2836	0.77, 1.11	0 (0, 58)	0.405	0/	0.61	NP
yes	7	6690/897524	0.86 (0.74, 1.02)	0.92 (0.81, 1.04)	0.191	0.66, 1.28	47 (0, 76)	0.623	1/	4.03	NP
<b>Adjustment for alcohol</b>											
no	10	5749/1051668	0.97 (0.81, 1.16)	0.98 (0.88, 1.09)	0.689	0.87, 1.10	0 (0, 53)	0.415	0/	0.66	NP
yes	4	4561/309702	0.86 (0.74, 1.02)	0.84 (0.72, 0.97)	0.019	0.51, 1.39	38 (0, 79)	0.875	1/	2.53	NP
<b>Number of adjustment factors</b>											
lower tertile of number of adjustment factors	6	2845/120090	1.05 (0.81, 1.37)	0.92 (0.79, 1.05)	0.222	0.74, 1.12	0 (0, 61)	0.138	0/	0.49	NP
Intermediate tertile of number of adjustment factors	4	3147/931694	0.97 (0.81, 1.16)	1.01 (0.88, 1.15)	0.932	0.74, 1.37	0 (0, 68)	0.920	0/	0.30	NP
upper tertile of number of adjustment factors	4	4318/309586	0.86 (0.74, 1.02)	0.88 (0.74, 1.05)	0.168	0.43, 1.82	61 (0, 85)	0.556	1/	2.48	NP
Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NS, not significant; PA, physical activity; RR, relative risk;											
*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.											
** Random effects refer to summary risk ratio (95% CI) using the random-effects model.											
#P-value of the summary random effects estimate.											
† P-value from the Egger's regression asymmetry test.											
‡ Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.											
## Observed/Expected number of statistically significant studies											
* P-value of the excess statistical significance test											

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NS, not significant; PA, physical activity; RR, relative risk;

\*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\* Random effects refer to summary risk ratio (95% CI) using the random-effects model.

#P-value of the summary random effects estimate.

† P-value from the Egger's regression asymmetry test.

‡ Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

\* P-value of the excess statistical significance test

**Table S35: Subgroup analysis of physical activity and ovarian cancer**

Variable	Number of studies	Number of cases/Sample size	Largest study, RR (95% CI)*	Random Effects, RR (95% CI)**	Random Effects, P#	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P†	Excess significance		
									O/E‡,##	P-value*	Evidence Grande
<b>Cancer subsite</b>											
Ovarian cancer, overall	17	7067/725489	1.18 (0.94, 1.47)	0.88 (0.76, 1.03)	0.123	0.53, 1.47	58 (18, 74)	0.632	5/ 6.33	NP	NS
Ovarian cancer, borderline tumors	2	485/3031	0.90 (0.60, 1.20)	0.95 (0.71, 1.28)	0.747	NA	0 (NA)	NA	0/ 0.26	NP	NS
Ovarian cancer, invasive tumors	2	1714/4260	0.90 (0.70, 1.10)	0.9 (0.76, 1.08)	0.233	NA	0 (NA)	NA	0/ 0.51	NP	NS
<b>PA intensity</b>											
high	21	9266/732780	1.18 (0.94, 1.47)	0.9 (0.8, 1.01)	0.068	0.61, 1.33	49 (2, 68)	0.698	5/ 7.87	NP	NS
moderate	20	9180/687032	1.10 (0.95, 1.28)	0.92 (0.85, 0.99)	0.024	0.71, 1.18	45 (0, 66)	0.593	4/ 3.33	0.76	Weak
moderate to high	21	9266/732780	1.14 (1.00, 1.27)	0.92 (0.85, 1)	0.0506	0.65, 1.28	68 (46, 79)	0.783	10/ 4.92	0.02	NS

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NS, not significant; PA, physical activity; RR, relative risk;

\*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\* Random effects refer to summary risk ratio (95% CI) using the random-effects model.

#P-value of the summary random effects estimate.

† P-value from the Egger's regression asymmetry test.

‡ Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

\* P-value of the excess statistical significance test

**Table S36: Subgroup analysis of physical activity and pancreas cancer**

Variable	Number of studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P <sup>†</sup>	Excess significance			Evidence Grande
									O/E <sup>‡,##</sup>	P-value <sup>‡</sup>		
<b>Pancreatic cancer incidence</b>												
<b>Location</b>												
Asia	4	918/626404	1.00 (0.81, 1.23)	0.90 (0.74, 1.10)	0.301	0.60, 2.04	22 (0, 74)	0.378	0/ 0.2	NP	NS	
Europe	12	5421/2876253	1.00 (0.91, 1.10)	0.87 (0.76, 0.99)	0.038	0.79, 1.67	53 (0, 74)	0.117	1/ 0.6	0.46	Weak	
North America	12	3470/1066006	0.93 (0.83, 1.05)	0.88 (0.78, 1.00)	0.051	0.85, 1.49	30 (0, 64)	0.226	1/ 1.11	NP	NS	
<b>Timing in life of PA</b>												
Consistent	7	3432/540388	0.91 (0.77, 1.08)	0.78 (0.65, 0.93)	0.007	0.81, 2.04	43 (0, 74)	0.283	1/ 1.25	NP	Weak	
distant past	3	773/552696	0.92 (0.67, 1.27)	1.05 (0.77, 1.45)	0.751	0.04, 25.00	46 (0, 84)	0.995	0/ 0.32	NP	NS	
recent past	18	5604/3475579	1.00 (0.91, 1.10)	0.91 (0.83, 0.99)	0.030	0.90, 1.35	27 (0, 58)	0.023	1/ 0.85	0.58	Weak	
<b>Study quality score</b>												
Lower tertile of quality score	11	4357/1924594	1.00 (0.91, 1.10)	0.88 (0.79, 0.99)	0.039	0.85, 1.49	38 (0, 68)	0.069	1/ 0.55	0.43	Weak	
Intermediate tertile of quality score	6	2401/1555424	0.93 (0.83, 1.05)	0.93 (0.84, 1.01)	0.093	0.95, 1.23	0 (0, 61)	0.140	0/ 0.7	NP	NS	
Upper tertile of quality score	11	3051/1088645	1.00 (0.76, 1.32)	0.85 (0.70, 1.04)	0.112	0.65, 2.13	56 (0, 76)	0.419	1/ 0.5	0.4	NS	
<b>Type of PA assessment</b>												
Duration	5	1208/941734	1.00 (0.81, 1.23)	0.96 (0.76, 1.22)	0.744	0.53, 2.04	42 (0, 78)	0.525	0/ 0.25	NP	NS	
energy_expenditure	10	2846/1153443	1.00 (0.76, 1.32)	0.79 (0.65, 0.94)	0.011	0.77, 2.13	46 (0, 73)	0.133	2/ 0.45	0.07	Weak	
Frequency	7	3717/2007007	1.00 (0.91, 1.10)	0.93 (0.83, 1.04)	0.232	0.80, 1.45	47 (0, 76)	0.463	0/ 0.35	NP	NS	
Qualitative	6	2038/466479	0.91 (0.77, 1.08)	0.87 (0.76, 0.99)	0.035	0.96, 1.39	0 (0, 61)	0.326	0/ 0.91	NP	Weak	
<b>Adjustment for smoking</b>												
No	4	691/125288	0.63 (0.41, 0.94)	0.71 (0.57, 0.89)	0.003	0.86, 2.27	0 (0, 68)	0.062	1/ 3.22	NP	Weak	
Yes	24	9118/4443375	1.00 (0.91, 1.10)	0.91 (0.83, 0.98)	0.016	0.87, 1.41	37 (0, 61)	0.063	1/ 1.15	NP	Weak	
<b>Adjustment for adiposity</b>												
No	13	3799/1234778	0.91 (0.77, 1.08)	0.86 (0.78, 0.95)	0.004	1.03, 1.28	0 (0, 49)	0.205	0/ 1.77	NP	Weak	
Yes	15	6010/3333885	1.00 (0.91, 1.10)	0.90 (0.81, 1.00)	0.060	0.81, 1.54	52 (0, 72)	0.132	2/ 0.7	0.15	NS	
<b>Adjustment for alcohol</b>												
No	16	5836/3341107	1.00 (0.91, 1.10)	0.89 (0.82, 0.97)	0.010	0.92, 1.37	25 (0, 58)	0.012	1/ 0.75	0.54	Weak	
Yes	12	3973/1227556	0.93 (0.83, 1.05)	0.87 (0.74, 1.02)	0.094	0.73, 1.82	53 (0, 74)	0.379	1/ 1.16	NP	NS	
<b>Adjustment for diabetes</b>												
No	14	5836/2466761	1.00 (0.91, 1.10)	0.89 (0.81, 0.97)	0.011	0.92, 1.37	29 (0, 62)	0.029	1/ 0.7	0.51	Weak	
Yes	14	3973/2101902	1.00 (0.81, 1.23)	0.88 (0.76, 1.01)	0.079	0.74, 1.75	48 (0, 70)	0.129	1/ 0.65	0.49	NS	
<b>Adjustment for adiposity and diabetes</b>												
No	9	2879/601636	0.91 (0.77, 1.08)	0.88 (0.78, 1.01)	0.0706	0.89, 1.45	14 (0, 60)	0.443	0/ 1.28	NP	NS	
Yes	19	6930/3967027	1.00 (0.91, 1.10)	0.88 (0.80, 0.97)	0.011	0.85, 1.52	46 (0, 68)	0.038	2/ 0.9	0.23	Weak	
<b>Smoking status</b>												
non-smoker	4	0/0	1.00 (0.96, 1.04)	1.00 (0.96, 1.04)	0.976	0.92, 1.09	0 (0, 68)	0.664	NA NA	NP	NS	
Smoker	3	0/0	1.02 (1.00, 1.05)	1.02 (1.00, 1.04)	0.104	0.84, 1.15	0 (0, 73)	0.495	NA NA	NP	NS	
<b>Adiposity status</b>												
normal weight	2	0/0	0.98 (0.68, 1.43)	0.93 (0.65, 1.3)	0.646	NA	0 (NA)	NA	NA NA	NP	NS	

Obese	4	0/0	0.94 (0.73, 1.22)	0.81 (0.59, 1.11)	0.186	0.39, 3.85	48 (0, 81)	0.212		NP	NS
<b>PA intensity</b>											
Moderate	3	528/239055	1.14 (0.79, 1.64)	0.68 (0.35, 1.32)	0.257	0.01, 100	80 (0, 92)	0.656	1/ 0.48	0.41	NS
Vigorous	7	3424/2912911	0.93 (0.83, 1.05)	0.96 (0.87, 1.05)	0.364	0.92, 1.18	0 (0, 58)	0.882	0/ 0.94	NP	NS
<b>Pancreatic cancer mortality</b>											
<b>Location</b>											
Asia	3	659/244097	0.97 (0.72, 1.32)	1.02 (0.81, 1.28)	0.849	0.22, 4.35	0 (0, 73)	0.222	0/ 0.17	NP	NS
<b>Timing in life of PA</b>											
recent past	3	424/151915	0.98 (0.65, 1.47)	1.00 (0.70, 1.43)	0.100	0.06, 16.67	16 (0, 77)	0.846	0/ 0.16	NP	NS
<b>Study quality score</b>											
Lower tertile of quality score	2	353/128988	0.97 (0.72, 1.32)	0.93 (0.7, 1.22)	0.574	NA	0 (NA)	NA	0/ 0.11	NP	NS
<b>Type of PA assessment</b>											
Qualitative	2	353/128988	0.97 (0.72, 1.32)	0.93 (0.70, 1.22)	0.574	NA	0 (NA)	NA	0/ 0.11	NP	NS
<b>Adjustment for smoking</b>											
Yes	3	585/153776	0.98 (0.65, 1.47)	1.01 (0.76, 1.35)	0.927	0.15, 6.67	1 (0, 73)	0.741	0/ 0.16	NP	NS
<b>Adjustment for adiposity</b>											
No	2	506/143272	0.97 (0.72, 1.32)	1.05 (0.81, 1.37)	0.703	NA	0 (NA)	NA	0/ 0.11	NP	NS
Yes	2	373/121089	0.98 (0.65, 1.47)	0.90 (0.64, 1.28)	0.558	NA	0 (NA)	NA	0/ 0.1	NP	NS
<b>Adjustment for alcohol</b>											
No	4	879/264361	0.97 (0.72, 1.32)	0.99 (0.81, 1.22)	0.960	0.64, 1.59	0 (0, 68)	0.866	0/ 0.22	NP	NS
<b>Adjustment for adiposity</b>											
No	2	353/128988	0.97 (0.72, 1.32)	0.93 (0.7, 1.22)	0.574	NA	0 (NA)	NA	0/ 0.11	NP	NS
Yes	2	526/135373	0.98 (0.65, 1.47)	1.10 (0.8, 1.52)	0.568	NA	0 (NA)	NA	0/ 0.11	NP	NS
<b>Adjustment for adiposity and diabetes</b>											
Yes	3	585/153776	0.98 (0.65, 1.47)	1.01 (0.76, 1.35)	0.927	0.15, 6.67	1 (0, 73)	0.741	0/ 0.16	NP	NS
<b>PA intensity</b>											
Vigorous	2	249/35352	0.86 (0.61, 1.2)	0.85 (0.62, 1.18)	0.334	NA	0 (NA)	NA	0/ 0.31	NP	NS

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NS, not significant; PA, physical activity; RR, relative risk;

\* Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\* Random effects refer to summary risk ratio (95% CI) using the random-effects model.

# P-value of the summary random effects estimate.

† P-value from the Egger's regression asymmetry test.

‡ Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

\* P-value of the excess statistical significance test

**Table S37: Subgroup analysis of physical activity and proximal colon cancer**

Variable	Number of studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P <sup>†</sup>	Excess significance		
									O/E <sup>‡,##</sup>	P-value <sup>‡</sup>	Evidence Grade
Proximal colon, inc.	21	11827/2487353	0.86 (0.74, 1.01)	0.72 (0.64, 0.81)	5.7E-08	0.5, 1.04	44 (0, 66)	0.041	9/6.50	0.244	Suggestive
<b>Study design</b>											
Case-control	9	3686/50439	0.59 (0.47, 0.75)	0.64 (0.48, 0.85)	0.002	0.28, 1.47	61 (0, 80)	0.396	5/7.20	NP	Weak
Cohort	12	8141/2436914	0.86 (0.74, 1.01)	0.78 (0.70, 0.85)	2.7E-07	0.67, 0.91	9 (0, 54)	0.123	4/4.58	NP	Suggestive
<b>Risk of bias</b>											
High risk	10	5800/1268527	0.79 (0.67, 0.93)	0.65 (0.54, 0.78)	5.29584E-06	0.41, 1.02	39 (0, 70)	0.012	6/ 4.53	0.36	Suggestive
Low risk	11	6027/1218826	0.86 (0.74, 1.01)	0.78 (0.66, 0.91)	0.0016	0.51, 1.19	48 (0, 72)	0.662	3/ 3.48	NP	Weak
<b>PA domain</b>											
Household	2	562/458950	0.74 (0.54, 1.02)	0.65 (0.46, 0.93)	0.020	NA	30 (NA)		1/ 1.41	NP	Weak
Occupational	10	7638/1914146	0.79 (0.67, 0.93)	0.69 (0.57, 0.85)	0.002	0.41, 1.19	48 (0, 73)	0.217	6/ 5.47	1	Suggestive
Recreational	11	4490/1450947	0.86 (0.74, 1.01)	0.84 (0.76, 0.93)	0.0004	0.75, 0.93	0 (0, 51)	0.277	1/ 3.59	NP	Suggestive
2 or more PA domains	8	3211/560235	0.59 (0.47, 0.75)	0.67 (0.51, 0.87)	0.003	0.33, 1.33	48 (0, 75)	0.902	4/ 6.98	NP	Weak
<b>PA definition<sup>§</sup></b>											
definition 1	11	6379/1874424	0.79 (0.67, 0.93)	0.72 (0.63, 0.84)	2.86661E-05	0.51, 1.03	33 (0, 66)	0.207	5/ 6.14	NP	Suggestive
definition 2	6	4382/567918	0.86 (0.74, 1.01)	0.75 (0.59, 0.95)	0.017	0.39, 1.47	60 (0, 82)	0.332	2/ 1.87	1	Weak
definition 3	3	996/43510	0.60 (0.39, 0.94)	0.75 (0.51, 1.10)	0.144	0.01, 33.33	47 (0, 84)	0.908	1/ 2.37	NP	NS

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NS, not significant; PA, physical activity; RR, relative risk;

\*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\*Random effects refer to summary risk ratio (95% CI) using the random-effects model.

#P-value of the summary random effects estimate.

†P-value from the Egger's regression asymmetry test.

‡Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

‡ P-value of the excess statistical significance test

<sup>§</sup>Definition 1 = splenic flexure included as part of the proximal colon; Definition 2 = splenic flexure included as part of the distal colon; Definition 3 = splenic flexure not included in definition of the proximal colon or the distal colon.

**Table S38: Subgroup analysis of physical activity and kidney cancer**

no	12	8442/1500310	0.86 (0.71, 1.04)	0.89 (0.79, 1.01)	0.074	0.66, 1.20	36 (0, 66)	0.849	2/	4.55	NP	NS
yes	5	2245/692723	0.77 (0.64, 0.92)	0.81 (0.64, 1.04)	0.103	0.40, 1.64	47 (0, 79)	0.860	2/	3.34	NP	NS
<b>Number of adjustment factors</b>												
lower tertile of number of adjustment factors	9	7135/1069297	0.86 (0.71, 1.04)	0.92 (0.79, 1.06)	0.256	0.68, 1.23	21 (0, 63)	0.626	1/	3.61	NP	NS
Intermediate tertile of number of adjustment factors	3	1509/608390	1.01 (0.83, 1.23)	0.99 (0.86, 1.15)	0.920	0.40, 2.50	0 (0, 73)	0.636	0/	0.15	NP	NS
upper tertile of number of adjustment factors	5	2043/515346	0.77 (0.64, 0.92)	0.73 (0.61, 0.88)	0.002	0.45, 1.19	34 (0, 75)	0.641	3/	2.83	1	Suggestive
<b>Kidney cancer mortality</b>												
<b>Timing in life of PA</b>												
recent past	2	69/136180	0.54 (0.25, 1.18)	0.68 (0.38, 1.22)	0.190		0 (NA)	NA	0/	1.03	NP	NS
<b>Adjustment for hypertension</b>												
no	2	69/136180	0.54 (0.25, 1.18)	0.68 (0.38, 1.22)	0.190	0.68, 1.30	0 (NA)	NA	/0	1.03	NP	NS

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NS, not significant; PA, physical activity; RR, relative risk;

\*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\*Random effects refer to summary risk ratio (95% CI) using the random-effects model.

#P-value of the summary random effects estimate.

†P-value from the Egger's regression asymmetry test.

‡Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

##Observed/Expected number of statistically significant studies

‡P-value of the excess statistical significance test

**Table S39: Subgroup analysis of physical activity and thyroid cancer**

Variable	Number of studies	Number of cases/Sample size	Largest study, RR (95% CI)*	Random Effects, RR (95% CI)**	Random Effects, P#	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P†	Excess significance		
									O/E‡,##	P-value‡	Evidence Grade
<b>Cancer subsite</b>											
Thyroid cancer, total	9	1569/821385	1.11 (0.91, 1.35)	1.11 (0.79, 1.59)	0.541	0.37, 3.33	75 (44, 86)	0.863	3/1	0.07	NS
Thyroid cancer, papillary	2	682/117920	0.76 (0.59, 0.98)	0.85 (0.66, 1.09)	0.201	NA	34 (NA)	NA	1/1.36	NP	NS
<b>Location</b>											
USA	9	1985/937362	1.11 (0.91, 1.35)	1.08 (0.87, 1.32)	0.522	0.61, 1.89	53 (0, 76)	0.614	2/1.15	0.32	NS
<b>Quality score</b>											
Lower	7	1084/676434	1.11 (0.91, 1.35)	1.14 (0.71, 1.79)	0.593	0.26, 5	81 (55, 89)	0.910	3/0.73	0.03	NS
Upper	4	1167/262871	0.76 (0.59, 0.98)	0.88 (0.74, 1.05)	0.155	0.58, 1.32	2 (0, 69)	0.108	1/2.51	NP	NS
<b>Adjustment for smoking</b>											
No	5	1139/120495	0.76 (0.59, 0.98)	0.86 (0.58, 1.28)	0.474	0.22, 3.45	79 (29, 89)	0.555	3/2.25	0.66	NS
Yes	6	1112/818810	1.11 (0.91, 1.35)	1.27 (0.96, 1.67)	0.092	0.64, 2.5	38 (0, 74)	0.790	1/0.74	0.55	NS
<b>Adjustment for adiposity</b>											
No	4	864/3556	0.76 (0.59, 0.98)	0.85 (0.51, 1.43)	0.549	0.08, 8.33	82 (34, 91)	0.6065	3/1.54	0.16	NS
Yes	7	1387/935749	1.11 (0.91, 1.35)	1.19 (0.96, 1.49)	0.115	0.72, 2	34 (0, 71)	0.783	1/0.9	1	NS
<b>Number of adjustment factors</b>											
lower tertile of number of adjustment factors	4	864/3556	0.76 (0.59, 0.98)	0.85 (0.51, 1.43)	0.549	0.08, 8.33	82 (34, 91)	0.606	3/1.54	0.16	NS
intermediate tertile of number of adjustment factors	6	1093/791430	1.11 (0.91, 1.35)	1.19 (0.93, 1.54)	0.173	0.62, 2.27	44 (0, 76)	0.858	1/0.74	0.54	NS

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; NA, not applicable, because the numbers of studies are less than three; NP, not pertinent, because the expected number of significant studies is larger than the observed; NS, not significant; PA, physical activity; RR, relative risk;

\*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\* Random effects refer to summary risk ratio (95% CI) using the random-effects model.

# P-value of the summary random effects estimate.

† P-value from the Egger's regression asymmetry test.

‡ Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

§ P-value of the excess statistical significance test

**Table S40: Sensitivity analyses excluding robustness of evidence criterion**

Cancer	Original evidence Grade	Number of cases	Random effects P<10 <sup>-6</sup> *	Evidence grade after excluding the criterion				
				Largest study with p<0.05**	I <sup>2</sup> <50%	95% prediction interval excluding the null value	Small study effect test†	Excess significance test‡
<b>Any physical inactivity</b>								
Meningioma, inc. or mort.	Weak	Weak	Weak	Weak	Weak	Weak	Weak	Weak
Multiple sites, inc. or mort. Endometrial, inc.	Weak	Weak	Weak	Weak	Weak	Weak	Weak	Weak
	Suggestive	Suggestive	Highly suggestive	Suggestive	Suggestive	Suggestive	Suggestive	Suggestive
Pancreas, inc.	Weak	Weak	Weak	Weak	Weak	Weak	Weak	Weak
Lung, inc.	Suggestive	Suggestive	Suggestive	Suggestive	Suggestive	Suggestive	Suggestive	Suggestive
All, mort.	Highly suggestive	Highly suggestive	Highly suggestive	Highly suggestive	Highly suggestive	Highly suggestive	Highly suggestive	Highly suggestive
Colon, inc. or mort.	Suggestive	Suggestive	Suggestive	Suggestive	Suggestive	Suggestive	Suggestive	Suggestive
Breast, inc.	Highly suggestive	Highly suggestive	Highly suggestive	Highly suggestive	Highly suggestive	Highly suggestive	Strong	Highly suggestive
<b>Recreational physical inactivity</b>								
Meningioma, inc. or mort.	Weak	Weak	Weak	Weak	Weak	Weak	Weak	Weak
Esophageal, inc.	Weak	Weak	Weak	Weak	Weak	Weak	Weak	Weak
All, mort.	Suggestive	Suggestive	Suggestive	Suggestive	Suggestive	Suggestive	Suggestive	Suggestive
Colon, inc.	Strong	Strong	Strong	Strong	Strong	Strong	Strong	Strong
Lung, inc.	Suggestive	Suggestive	Suggestive	Suggestive	Suggestive	Suggestive	Suggestive	Suggestive

Abbreviations: CI, confidence interval; inc., incidence; mort., mortality; RR, relative risk;

\*P-value of the summary random effects estimate <10<sup>-3</sup> instead of P<10<sup>-6</sup>

\*\*Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

†P-value from the Egger's regression asymmetry test.

‡P-value of the excess statistical significance test <0.05

\*Using Random effect P value <10<sup>-3</sup> instead of P<10<sup>-6</sup>

**Table S41: Robustness of evidence grading for cohort studies associating leisure-time physical activity and risk of developing or dying from cancer in the Moore et al. study.**

Variable	Number of studies	Number of cases/Sample size	Largest study, RR (95% CI) <sup>*</sup>	Random Effects, RR (95% CI) <sup>**</sup>	Random Effects, P <sup>#</sup>	95% Prediction Interval	I <sup>2</sup> (95% CI)	Egger's P <sup>†</sup>	Excess significance	
									O/E <sup>‡,##</sup>	P-value <sup>*</sup>
<b>Associations supported by strong evidence</b>										
lung	12	19133/1436624	0.74 (0.70, 0.78)	0.74 (0.71, 0.77)	<2.13E-10	(0.71, 0.78)	0 (0, 50)	0.867	7/9.79	NP
melanoma	12	12438/1436624	1.23 (1.13, 1.33)	1.28 (1.19, 1.39)	2.13E-10	(1.05, 1.57)	47 (0, 71)	0.908	6/6.97	NP
breast	10	35178/816668	0.89 (0.84, 0.94)	0.90 (0.87, 0.93)	2.27E-09	(0.84, 0.96)	15 (0, 60)	0.483	6/7.30	NP
kidney	11	4548/1406624	0.76 (0.67, 0.85)	0.77 (0.71, 0.84)	9.7E-09	(0.69, 0.87)	2 (0, 52)	0.896	4/6.00	NP
<b>Associations supported by suggestive evidence</b>										
bladder	12	9073/1436624	0.87 (0.80, 0.95)	0.87 (0.82, 0.93)	7.85E-06	(0.81, 0.93)	0 (0, 50)	0.591	3/4.22	NP
colon	12	14160/1436624	0.73 (0.67, 0.78)	0.84 (0.77, 0.91)	4.5E-05	(0.66, 1.06)	52 (0, 74)	0.016	5/10.31	NP
prostate	7	46890/619956	1.07 (1.03, 1.11)	1.06 (1.03, 1.08)	8.53E-05	(1.02, 1.09)	0 (0, 58)	0.193	1/4.16	NP
head and neck	11	3985/1406624	0.78 (0.69, 0.88)	0.85 (0.78, 0.93)	0.000333	(0.76, 0.94)	0 (0, 51)	0.023	1/4.83	NP
<b>Associations supported by weak evidence</b>										
rectum	12	5531/1436624	0.84 (0.75, 0.95)	0.87 (0.80, 0.94)	0.001	(0.76, 0.99)	7 (0, 53)	0.093	3/4.43	NP
myeloid leukemia	10	1692/1348657	0.81 (0.65, 1.00)	0.80 (0.70, 0.92)	0.002	(0.68, 0.95)	0 (0, 53)	0.919	1/2.88	NP
endometrial	9	5346/786668	0.60 (0.52, 0.69)	0.79 (0.68, 0.92)	0.002	(0.49, 1.26)	68 (19, 82)	0.411	4/8.89	NP
myeloma	9	2161/1341506	0.98 (0.81, 1.18)	0.83 (0.72, 0.95)	0.008	(0.66, 1.04)	9 (0, 58)	0.098	1/0.48	0.400
esophageal adenocarcinoma	5	899/1173535	0.74 (0.58, 0.94)	0.55 (0.35, 0.89)	0.014	(0.11, 2.70)	74 (1, 88)	0.197	2/2.30	NP
gastric cardia	6	790/1211119	0.74 (0.57, 0.97)	0.78 (0.64, 0.95)	0.014	(0.58, 1.03)	0 (0, 61)	0.654	1/2.33	NP
liver	10	1384/1348657	0.52 (0.42, 0.65)	0.73 (0.55, 0.98)	0.037	(0.33, 1.64)	56 (0, 77)	0.076	3/7.21	NP
small intestine	7	503/1239009	0.64 (0.45, 0.93)	0.77 (0.60, 1.00)	0.047	(0.55, 1.08)	0 (0, 58)	0.038	1/3.10	NP
<b>Associations were not statistically significant</b>										
non hodgkin lymphoma	11	6953/1406624	0.95 (0.86, 1.05)	0.91 (0.83, 1.00)	0.054	(0.74, 1.12)	27 (0, 64)	0.839	1/1.21	NP
gallbladder	6	382/1203206	0.51 (0.31, 0.85)	0.72 (0.51, 1.01)	0.054	(0.36, 1.43)	18 (0, 67)	0.951	1/4.51	NP
esophageal squamous	6	442/1211119	0.85 (0.56, 1.26)	0.81 (0.61, 1.06)	0.127	(0.54, 1.19)	0 (0, 61)	0.874	0/0.73	NP
thyroid	11	1829/1406624	1.00 (0.80, 1.26)	0.92 (0.81, 1.06)	0.249	(0.79, 1.08)	0 (0, 51)	0.502	0/0.55	NP
pancreas	10	4186/1348657	0.89 (0.78, 1.02)	0.95 (0.83, 1.08)	0.395	(0.70, 1.27)	34 (0, 67)	0.324	0/2.41	NP
brain	10	2110/1341429	0.96 (0.79, 1.18)	1.05 (0.93, 1.20)	0.427	(0.90, 1.23)	1 (0, 53)	0.670	0/0.62	NP
gastric non cardia	7	1428/1244125	0.78 (0.61, 0.99)	0.93 (0.73, 1.19)	0.583	(0.50, 1.74)	45 (0, 75)	0.174	2/2.90	NP
soft tissue	10	851/1369396	0.94 (0.69, 1.30)	0.94 (0.68, 1.31)	0.734	(0.39, 2.30)	51 (0, 74)	0.592	2/0.62	0.123
lymphocytic leukemia	10	2160/1369396	0.97 (0.80, 1.17)	0.98 (0.87, 1.11)	0.749	(0.85, 1.13)	0 (0, 53)	0.572	0/0.57	NP
ovary	9	2880/786668	0.97 (0.79, 1.20)	1.01 (0.91, 1.13)	0.809	(0.89, 1.16)	0 (0, 54)	0.107	0/0.54	NP

Abbreviations: CI, confidence interval; NP, not pertinent, because the expected number of significant studies is larger than the observed;

\* Relative risk and 95% confidence interval of largest study (smallest SE) in each meta-analysis.

\*\* Random effects refer to summary risk ratio (95% CI) using the random-effects model.

# P-value of the summary random effects estimate.

† P-value from the Egger's regression asymmetry test.

‡ Expected number of statistically significant studies using the point estimate of the largest study (smallest SE) as the plausible effect size.

## Observed/Expected number of statistically significant studies

\* P-value of the excess statistical significance test

**Table S42: Subgroup analysis related to cancer variables performed in the original meta-analyses and its report transparency**

References	Cancer site	Cancer subsite	Confirmatory cases	Endpoint	ERPR	Histology	Tumor grade
Behrens et al. (1)	Kidney	No	No	No	No	No	No
Behrens et al. (2)	Esophageal	Yes	No	No	No	Yes	No
Behrens et al. (3)	Pancreas	No	No	Partially	No	No	No
Boyle et al. (4)	Proximal and Distal Colon	Yes	No	No	No	No	No
Brenner et al. (5)	Lung	No	Partially	No	No	Partially	No
Jochem et al. (6)	Hematologic**	Yes	No	No	No	No	No
Keimling et al. (7)	Bladder	No	No	No	No	No	No
Li et al. (8)	All cancer mortality	No	No	No	No	No	No
Neilson et al. (9)	Breast	Partially	No	No	Partially	Partially	Partially
Niedermaier et al. (10)	Meningioma and Glioma	Yes	No	No	No	No	No
Pizot et al. (11)	Breast	No	No	No	No	No	No
Psaltopoulou et al. (12)	Gastric	Yes	No	No	No	No	No
Robsahm et al. (13)	Rectum	Yes	No	No	No	No	No
Samad et al. (14)	Rectum	Partially	No	No	No	No	No
Schmid et al. (15)	Thyroid	No	No	No	No	No	No
Schmid et al. (16)	Endometrial	No	No	No	No	No	No
Shi et al. (17)	Multiple sites	Partially	No	No	No	No	No
Wolin et al. (18)	Colon	No	No	No	No	No	No
Zhong et al. (19)	Ovary	No	No	No	No	No	Yes

#### Dictionary

Yes	Performed the subgroup analysis and reported transparently (i.e. forest plot or RR and 95%CI of each individual studies in the subgroup analysis were available)
Partially	Performed but did not provided data (e.g. only aggregate RR and 95%CI for the subgroup analysis were available)
No	Did not performed the subgroup analysis

**Table S43: Subgroup analysis related to study characteristics performed in the original meta-analyses and its report transparency**

Reference	Cancer site	Year	Country/ Location	Study Design	Source of cohort/controls	Cases, no.	Sample, no.	Follow-up	Questionnaire/ interview	Quality score/ risk of bias	Published data/obtained with authors	Risk statistics
Behrens et al. (1)	Kidney	No	Partially	Yes	No	No	No	No	No	Partially	No	No
Behrens et al. (2)	Esophageal	No	Partially	Yes	No	No	No	No	No	Partially	No	No
Behrens et al. (3)	Pancreas	No	Partially	Yes	No	No	No	No	No	Partially	No	No
Boyle et al. (4)	Proximal and Distal Colon	No	No	Yes	No	No	No	No	No	Yes	No	No
Brenner et al. (5)	Lung	Partially	Partially	Yes	Partially	No	No	No	No	No	No	No
Jochem et al. (6)	Hematologic**	No	Partially	Partially	No	No	No	No	No	2	No	No
Keimling et al. (7)	Bladder	No	Partially	Yes	No	No	No	No	Partially	No	No	No
Li et al. (8)	All cancer mortality	Partially	Partially	No	Partially	No	No	Partially	Partially	Partially	No	No
Neilson et al. (9)	Breast	No	Partially	Yes	No	No	No	Partially	Partially	No	No	Partially
Niedermaier et al. (10)	Meningioma and Glioma	No	No	Partially	No	No	No	No	No	Partially	No	No
Pizot et al. (11)	Breast	Partially	Partially	No	No	No	No	No	No	No	No	No
Psaltopoulou et al. (12)	Gastric	No	Yes	Yes	No	No	No	No	No	No	Yes	No
Robsahm et al. (13)	Rectum	No	No	No	No	No	No	No	No	No	No	No
Samad et al. (14)	Rectum	No	No	Partially	No	No	No	No	No	No	No	No
Schmid et al. (15)	Thyroid	No	Partially	Yes	No	No	No	No	No	Partially	No	No
Schmid et al. (16)	Endometrial	No	Partially	Yes	No	Partially	Partially	No	No	Partially	No	No
Shi et al. (17)	Multiple sites	No	Partially	Partially	No	Partially	No	No	No	Partially	No	No
Wolin et al. (18)	Colon	No	No	Yes	No	No	No	No	No	No	No	No
Zhong et al. (19)	Ovary	No	No	Yes	No	No	No	No	No	No	No	No

Dictionary

Yes	Performed the subgroup analysis and reported transparently (i.e. forest plot or RR and 95%CI of each individual studies in the subgroup analysis were available)
Partially	Performed but did not provided data (e.g. only aggregate RR and 95%CI for the subgroup analysis were available)
No	Did not performed the subgroup analysis

**Table S44: Subgroup analysis related to “adjustments” performed in the original meta-analyses and its report transparency**

References	Cancer site	Smoking	Adiposity	Alcohol	Diabetes	HAS	Parity	OC	HRT	Other PA	Age	Number of covariates
Behrens et al. (1)	Kidney	Partially	Partially	No	Partially	Partially	No	No	No	No	No	Partially
Behrens et al. (2)	Esophageal	Partially	Partially	Partially	No							
Behrens et al. (3)	Pancreas	Partially	Partially	Partially	Partially	No						
Boyle et al. (4)	Proximal and Distal Colon	No										
Brenner et al. (5)	Lung	No	Partially	No	Partially	Partially						
Jochem et al. (6)	Hematologic**	Partially	Partially	Partially	No	Partially						
Keimling et al. (7)	Bladder	Partially	Partially	3	No	Partially						
Li et al. (8)	All cancer mortality	No	Partially									
Neilson et al. (9)	Breast	No	Partially	No	No	No	No	No	No	Partially	Partially	No
Niedermaier et al. (10)	Meningioma and Glioma	No	Partially	No								
Pizot et al. (11)	Breast	No	Partially	No								
Psaltopoulou et al. (12)	Gastric	No										
Robsahm et al. (13)	Rectum	No										
Samad et al. (14)	Rectum	No										
Schmid et al. (15)	Thyroid	Partially	Partially	No	Partially							
Schmid et al. (16)	Endometrial	No	Partially	No	No	No	Partially	Partially	Partially	No	No	No
Shi et al. (17)	Multiple sites	No	Partially	No								
Wolin et al. (18)	Colon	No										
Zhong et al. (19)	Ovary	No										

Abbreviations: HAS – hypertension; OC - oral contraceptive; HRT - Hormone replacement therapy; PA - physical activity; ERPR - Estrogen and Progesterone receptors

#### Dictionary

Yes	Performed the subgroup analysis and reported transparently (i.e. forest plot or RR and 95%CI of each individual studies in the subgroup analysis were available)
Partially	Performed but did not provided data (e.g. only aggregate RR and 95%CI for the subgroup analysis were available)
No	Did not performed the subgroup analysis

**Table S45: Subgroup analysis related to population characteristics performed in the original meta-analyses and its report transparency**

References	Cancer site	Smoking Status	Adiposity Status	OC use	HRT use	Menopausal status	Parity	Family History	Sex	Median age	Race/ethnicity
Behrens et al. (1)	Kidney	No	No	No	No	No	No	No	Yes	No	No
Behrens et al. (2)	Esophageal	No	No	No	No	No	No	No	Yes	No	No
Behrens et al. (3)	Pancreas	Yes	Yes	No	No	No	No	No	Partially	No	No
Boyle et al. (4)	Proximal and Distal Colon	No	No	No	No	No	No	No	Yes	No	No
Brenner et al. (5)	Lung	Yes	No	No	No	No	No	No	Partially	Partially	No
Jochem et al. (6)	Hematologic**	No	No	No	No	No	No	No	Yes	No	No
Keimling et al. (7)	Bladder	No	No	No	No	No	No	No	Partially	No	No
Li et al. (8)	All cancer mortality	No	No	No	No	No	No	No	Partially	No	Partially
Neilson et al. (9)	Breast	No	Partially	Partially	Partially	Yes	Partially	Partially	3	No	Partially
Niedermaier et al. (10)	Meningioma and Glioma	No	3	3	3	3	No	No	Partially	No	No
Pizot et al. (11)	Breast	No	Partially	3	Yes	Partially	No	No	3	No	No
Psaltopoulou et al. (12)	Gastric	No	No	No	No	No	No	No	Yes	No	No
Robsahm et al. (13)	Rectum	No	No	No	No	No	No	No	Partially	No	No
Samad et al. (14)	Rectum	No	No	No	No	No	No	No	Partially	No	No
Schmid et al. (15)	Thyroid	No	No	No	No	No	No	No	Partially	No	No
Schmid et al. (16)	Endometrial	No	Yes	No	No	Partially	No	No	No	No	No
Shi et al. (17)	Multiple sites	No	No	No	No	No	No	No	Partially	Partially	No
Wolin et al. (18)	Colon	No	No	No	No	No	No	No	No	No	No
Zhong et al. (19)	Ovary	No	No	No	No	No	No	No	No	No	No

Dictionary

Yes	Performed the subgroup analysis and reported transparently (i.e. forest plot or RR and 95%CI of each individual studies in the subgroup analysis were available)
Partially	Performed but did not provided data (e.g. only aggregate RR and 95%CI for the subgroup analysis were available)
No	Did not performed the subgroup analysis

**Table S46: Subgroup analysis related to physical activity variables performed in the original meta-analyses and its report transparency**

References	Cancer site	Domain	Timing in life	Intensity	Criteria
Behrens et al. (1)	Kidney	Yes	Partially	No	Partially
Behrens et al. (2)	Esophageal	Partially	Partially	No	Partially
Behrens et al. (3)	Pancreas	Yes	Yes	Yes	Partially
Boyle et al. (4)	Proximal and Distal Colon	Yes	No	No	No
Brenner et al. (5)	Lung	No	Partially	No	Partially
Jochem et al. (6)	Hematologic**	Partially	Partially	No	Partially
Keimling et al. (7)	Bladder	Yes	Partially	Partially	Partially
Li et al. (8)	All cancer mortality	No	No	No	Yes
Neilson et al. (9)	Breast	No	Partially	Partially	Partially
Niedermaier et al. (10)	Meningioma and Glioma	No	No	No	No
Pizot et al. (11)	Breast	Partially	No	No	Yes
Psaltopoulou et al. (12)	Gastric	3	No	No	No
Robsahm et al. (13)	Rectum	Partially	No	No	No
Samad et al. (14)	Rectum	Partially	No	No	No
Schmid et al. (15)	Thyroid	Partially	No	No	No
Schmid et al. (16)	Endometrial	Yes	Partially	Yes	No
Shi et al. (17)	Multiple sites	No	No	No	Partially
Wolin et al. (18)	Colon	No	No	No	No
Zhong et al. (19)	Ovary	No	No	No	Yes

#### Dictionary

Yes	Performed the subgroup analysis and reported transparently (i.e. forest plot or RR and 95%CI of each individual studies in the subgroup analysis were available)
Partially	Performed but did not provided data (e.g. only aggregate RR and 95%CI for the subgroup analysis were available)
No	Did not performed the subgroup analysis