ESM Results

Sex-specific association between diabetes and all-site cancer incidence

Data on all-site cancer incidence were available from 22 studies, 33 cohorts, 10,942,431 individuals (not counting one study [1] which did not state the total number of participants), and 843,865 events. Compared with subjects without diabetes, those with diabetes had a 24% (95% CI 18%, 30%, p < 0.001) increased risk of incident cancer in women and 11% (6%, 16%, p < 0.001) in men (ESM Fig. 9). The pooled women-to-men RRR for incidence of all-site cancer was 1.10 (1.07, 1.13 p < 0.001) (ESM Fig. 5). Across subgroups, the equivalent pooled RRR was 1.06 (1.02, 1.10, p = 0.003) for type 1 diabetes and 1.11 (1.08, 1.13, p < 0.001) for type 2 diabetes. There was significant heterogeneity in the diabetes-cancer association between studies ($l^2 = 51.3\%$, p for heterogeneity = 0.003). Exclusion of the 11 studies with only age-adjusted RRs did not change the RR and RRR estimates appreciably (RR in women 1.27 [1.19, 1.36], p < 0.001, RR in men 1.11 [1.02, 1.20], p = 0.02, RRR 1.12 [1.08, 1.16], p < 0.001, $l^2 = 46.2\%$) (ESM Fig. 10 and 11). There was no evidence of publication bias (Egger's test p = 0.82, Begg's test p = 0.15; ESM Fig. 12).

There was no evidence of between-subgroup heterogeneity in the RRR by study region (p = 0.64), year of baseline study (p = 0.73 for categorical analysis, p = 0.25 for continuous analysis), ascertainment of diabetes (p = 0.72), type of diabetes (p = 0.33), level of adjustment (p = 0.27), or quality of study (p = 0.75 for categorical analysis, p = 0.14 for continuous analysis) (ESM Fig. 13 and 14).

Sex-specific association between diabetes and all-site cancer mortality

Data on all-site cancer mortality were available from 36 studies, 101 cohorts, 10,923,139 individuals, and 309,992 deaths (not counting one study [2] which did not state the total number of cancer). The maximum available-adjusted RR for cancer mortality associated with diabetes was 1.29 (1.21, 1.38, p < 0.001) in women and 1.24 (1.15, 1.34, p < 0.001) in men (ESM Fig. 15). The pooled maximum available-adjusted women-to-men RRR for all-site cancer mortality was 1.03 (0.99, 1.06, p = 0.16) (ESM Fig. 6). The pooled RRR was 1.12 (0.96, 1.31, p = 0.14) for type 1 diabetes and 1.02 (0.99, 1.06, p = 0.25) for type 2 diabetes, with no evidence of heterogeneity between type of diabetes (p for heterogeneity = 0.32). The pooled RRs and RRR did not change significantly (RR in women 1.28 [1.15, 1.42], p < 0.001, RR in men 1.27 [1.16, 1.39], p < 0.001, RRR 1.01 [0.96, 1.06], p = 0.65) after exclusion of the studies which reported only age-adjusted RR (ESM Fig. 16 and 17). There was no evidence of publication bias (Egger's test p = 0.54, Begg's test p = 0.11, ESM Fig. 18).

The pooled RRR did not differ significantly by year of baseline study (p = 0.67 for categorical analysis, p = 0.89 for continuous analysis), ascertainment of diabetes (p = 0.62), type of diabetes (p = 0.32), level of adjustment (p = 0.55), or quality of study (p = 0.18 for categorical analysis, p = 0.19 for continuous analysis). A significant heterogeneity was observed by study region (RRR 1.05 [95%CI 1.01-1.08], p = 0.01 for non-Asia, 0.97 [0.91-1.02], p = 0.23 for Asia, p for interaction = 0.02) (ESM Fig. 19 and 20).

Sex-specific association between diabetes and incidence of cancer at specific sites

The pooled maximum available-adjusted RR in people with diabetes versus those without diabetes was increased in 41 sites in women and in 42 sites in men; amongst these, 21 sites in women and 15 sites in men showed a statistically significant (p < 0.01) increased risk (ESM Fig. 21). The pooled maximum available-adjusted women-to-men RRR for incidence of cancer was significantly greater than one (i.e. affecting women more than men) for kidney (1.11 [99% CI 1.04, 1.19], p < 0.001), oral (1.13 [1.01, 1.27], p = 0.009), and stomach (1.16 [1.06, 1.27], p < 0.001) cancer (ESM Fig. 22).

Sex-specific association between diabetes and mortality from cancer at specific sites

Diabetes was associated with an increased risk of cancer at 26 sites in women and 20 sites in men (ESM Fig. 23). Among these, a statistically significant increased risk was observed at 11 sites in women and 12 sites in men. On the other hand, only cancer of the brain and the nervous system in men was associated with a decreased risk in people with diabetes. The pooled maximum available-adjusted women-to-men RRR for mortality from cancer was significantly less than unity for cancer of the breast (RRR 0.28 [99% CI 0.12, 0.66], p < 0.001) and liver (0.84 [0.71, 0.99], p = 0.008) (ESM Fig. 24).

ESM References

- [1] Carstensen B, Read SH, Friis S, et al. (2016) Cancer incidence in persons with type 1 diabetes: a five-country study of 9,000 cancers in type 1 diabetic individuals. Diabetologia 59: 980-988
- Tierney EF, Geiss LS, Engelgau MM, et al. (2001) Population-based estimates of mortality associated with diabetes: use of a death certificate check box in North Dakota. Am J Public Health 91: 84-92

ESM Table 1. Search strategies

PubMed (Searched on Dec 23, 2016)

1 "Neoplasms" [MeSH Terms] 2 "Neoplasm" [All Fields] 3 "Cancer" [All Fields] 4 "Carcinoma" [All Fields] 5 "Tumor" [All Fields] 6 1 or 2 or 3 or 4 or 5 7 "Diabetes Mellitus" [MeSH Terms] 8 "Diabetes" [All Fields] 9 7 or 8 10 "Men" [MeSH Terms] 11 "Male" [MeSH Terms] 12 "Men" [MeSH Terms] 13 "Male" [All Fields] 14 10 or 11 or 12 or 13 15 "Women" [MeSH Terms] 16 "Female" [MeSH Terms] 17 "Women" [All Fields] 18 "Female" [All Fields] 18 "Female" [All Fields]	
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4 "Carcinoma" [All Fields] 5 "Tumor" [All Fields] 6 1 or 2 or 3 or 4 or 5 7 "Diabetes Mellitus" [MeSH Terms] 8 "Diabetes" [All Fields] 9 7 or 8 10 "Men" [MeSH Terms] 11 "Male" [MeSH Terms] 12 "Men" [All Fields] 13 "Male" [All Fields] 14 10 or 11 or 12 or 13 15 "Women" [MeSH Terms] 16 "Female" [MeSH Terms] 17 "Women" [All Fields] 18 "Female" [All Fields]	
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17 "Women" [All Fields] 18 "Female" [All Fields]	
18 "Female" [All Fields]	
19 15 or 16 or 17 or 18	
20 "Cohort Studies" [MeSH Terms]	
21 "Follow Up Studies" [MeSH Terms]	
22 "Prospective Studies" [MeSH Terms]	
23 "Longitudinal Studies" [MeSH Terms]	
24 "Cohort" [All Fields]	
25 "Follow-up" [All Fields]	
26 "Prospective" [All Fields]	
27 "Longitudinal" [All Fields]	
28 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27	
29 6 and 9 and 14 and 19 and 28	

ESM Table 2. Newcastle-Ottawa Quality assessment scale modified from reference 19

A study can be awarded a maximum of one point for each * within the Selection and Outcome categories. A maximum of two point can be given for Comparability.

Selection

- S1) Representativeness of the exposed cohort
 - a) truly representative of the general population*
 - b) somewhat representative of the general population
 - c) selected group of users e.g. nurses, volunteers
 - d) no description of the derivation of the cohort

S2) Selection of the non exposed cohort

- a) drawn from the same community as the exposed cohort*
- b) drawn from a different source
- c) no description of the derivation of the non exposed cohort
- S3) Ascertainment of exposure
 - a) secure record*
 - b) secure record or written self report
 - c) written self report
 - d) no description

S4) Demonstration that outcome of interest was not present at start of study

a) yes*

b) no

Comparability

C1) Comparability of cohorts on the basis of the design or analysis

a) study controls for age*

b) study also controls for additional factors*

Outcome

O1) Assessment of outcome

a) reference to medical records*

b) record linkage*

c) self report

d) no description

O2) Was follow-up long enough for outcomes to occur

a) yes (at least 5 years)*

b) no

O3) Adequacy of follow up of cohorts

a) complete follow up - all subjects accounted for*

b) subjects lost to follow up unlikely to introduce bias - > 90% follow up, or description

provided of those lost*

c) follow up rate < 90% and no description of those lost

d) no statement

Cohort	Men	Women	Difference (men - women)
Ragozzino et al.	na	na	na
Sasazuki et al.	1.06	0.57	0.49
Gini et al.	1.98	1.43	0.55
Berger et al.	0.68	0.71	-0.02
Carstensen et al.	0.20	0.26	-0.06
Diabetes II-to-Cancer	1.84	1.27	0.57
VHM&PP Study Cohort	0.53	0.36	0.17
Jee et al.	0.46	0.34	0.11
Wang et al.	0.42	0.34	0.08
Dankner et al.	0.56	0.51	0.05
NIH-AARP Diet and Health Study	1.72	1.20	0.52
Xu et al.	0.96	0.85	0.11
DRT	1.13	0.97	0.16
NDSS (T2DM)	1.63	1.12	0.51
MHS registry	1.21	1.01	0.20
CLUE II	0.90	0.72	0.18
Zhang et al.	0.85	0.69	0.16
ARIC	1.97	1.27	0.70
APCSC (Asia)	0.35	0.19	0.16
APCSC (Australia and New Zealand)	0.40	0.25	0.15
Singapore Chinese Health Study	na	na	na
Poole Diabetes Study	0.90	1.49	-0.59
DERI Mortality Study	0.0074	0.0049	0.0025
Diabetes UK cohort study (T1DM, T2DM)	na	na	na
Fresco study	0.21	0.10	0.11
NHIS-NSC	0.79	0.41	0.38
DECODE study	0.57	0.30	0.26
Tseng, et al.	0.91	0.56	0.35
Piemonte Diabetes Register, Turin Population Register	na	na	na
Hisayama	0.86	0.35	0.51
Forssas et al.	0.32	0.27	0.04
Fedeli et al.	1.20	0.79	0.41
HSE, SHeS	na	na	na
Shen et al.	1.16	0.72	0.45
Weiderpass et al.	1.07	0.93	0.14
CPS II	0.54	0.36	0.17
Verona Diabetes Study	1.12	0.70	0.43
Sievers et al.	0.09	0.07	0.01
2001 ENTRED study	na	na	na
Allegheny County Type 1 Diabetes Registry	na	na	na
BRFSS	na	na	na
Wong et al.	0.64	0.61	0.02
Bruno et al.	1.09	0.85	0.23
Shaw et al.	0.20	0.22	-0.02
Moss et al.	na	na	na
Chicago Heart Association Detection Project in Industry	0.22	0.19	0.04

ESM Table 3. Absolute risks of all-site cancer for the data in Figure 2 and 3

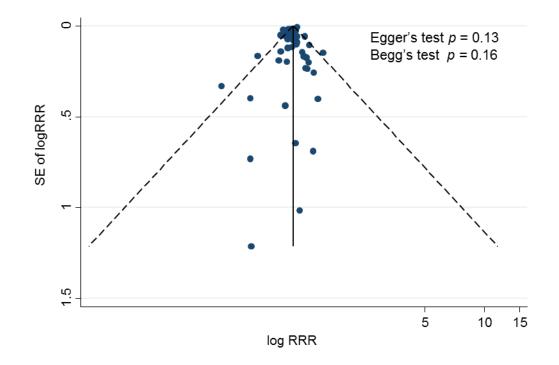
Incidence (or mortality) rates were described as per 100 person-years or (%) per year.

na: not available.

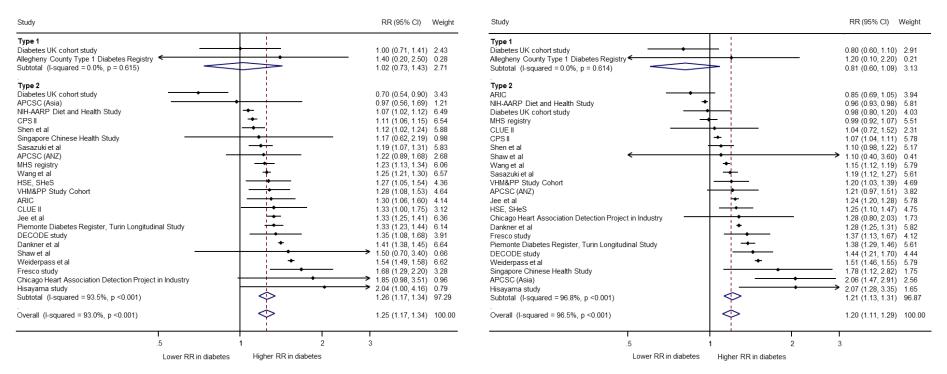
ESM Table 4. Quality assessment of the included studies

	Scores								
Cohort	S 1	S2	S 3	S4	C1	01	02	03	Sum
Ragozzino et al.	1	0	1	0	1	1	1	0	5
Sasazuki et al.	1	1	0	1	2	1	1	0	7
Gini et al.	1	1	1	1	1	1	0	1	7
Berger et al.	1	1	1	1	1	1	1	1	8
Carstensen et al.	1	1	1	1	1	1	1	1	8
Diabetes II-to-Cancer	1	0	1	1	1	1	0	1	6
VHM&PP Study Cohort	1	1	1	1	2	1	1	1	9
lee et al.	0	1	0	1	2	1	1	1	7
Wang et al.	1	0	1	1	2	1	1	0	7
Hsu et al.	1	1	1	1	1	1	1	1	8
Adami et al.	0	1	1	0	1	1	1	1	6
Dankner et al.	1	1	1	1	2	1	1	1	9
NIH-AARP Diet and Health Study	1	1	0	1	2	1	1	1	8
Xu et al.	1	1	1	0	1	1	0	1	6
DRT	1	1	1	0	1	1	1	1	7
NDSS (T2DM)	1	1	1	1	1	1	1	1	8
NDSS (T1DM)	1	1	1	1	1	1	1	1	8
Walker et al.	1	1	1	1	2	1	1	1	9
MHS registry	1	1	1	1	2	1	1	1	9
CLUE II	1	1	0	1	2	1	1	1	8
Zhang et al.	1	1	1	0	1	1	1	1	7
Västerbotten Intervention Project	1	1	1	1	2	1	1	1	9
ARIC	1	1	0	1	2	1	1	0	7
APCSC (Asia)	1	1	0	1	2	1	1	1	8
APCSC (Australia and New Zealand)	1	1	0	1	2	1	1	1	8
Singapore Chinese Health Study	1	1	1	1	2	1	1	1	9
Poole Diabetes Study	1	1	1	0	1	1	1	1	7
DERI Mortality Study	1	0	1	0	1	1	1	1	6
Diabetes UK cohort study	1	0	1	0	2	1	1	1	7
РНС	1	1	0	1	2	1	1	1	8
Fresco study	1	1	0	0	2	1	1	1	7
NHIS-NSC	1	0	1	0	1	1	1	1	6
DECODE study	0	1	0	0	2	1	1	0	5
ſseng, et al.	1	0	1	0	1	1	0	1	5
emonte Diabetes Register, Turin Population	1	1	1	0	2	1	1	1	8
Iisayama	1	1	0	1	2	1	1	1	8
Forssas et al.	1	1	1	0	1	1	1	1	7

Fedeli et al.	1	1	1	0	1	1	0	0	5
HSE, SHeS	1	1	0	1	2	1	1	1	8
Shen et al.	1	1	0	0	2	1	1	1	7
Weiderpass et al.	0	1	1	0	2	1	1	1	7
CPS II	1	1	0	1	2	1	1	1	8
Verona Diabetes Study	1	1	1	0	1	1	1	1	7
Sievers et al.	1	1	1	0	1	1	1	1	7
2001 ENTRED study	1	0	0	0	1	1	1	1	5
Allegheny County Type 1 Diabetes Registry	1	1	1	0	2	1	1	1	8
BRFSS	1	1	0	0	1	1	1	0	5
Wong et al.	1	1	1	0	1	1	1	1	7
Bruno et al.	1	0	1	0	1	1	1	1	6
Shaw et al.	1	1	0	0	2	1	1	1	7
Moss et al.	1	1	1	0	1	1	1	1	7
Takayama study	1	1	0	1	2	1	1	1	8
Chicago Heart Association Detection Project in Industry	0	1	0	0	2	1	1	1	6



ESM Figure 1. Funnel plot with pseudo 95% confidence limits for the data in Figure 3. Abbreviations; RRR, ratio of relative risk; SE, standard error.

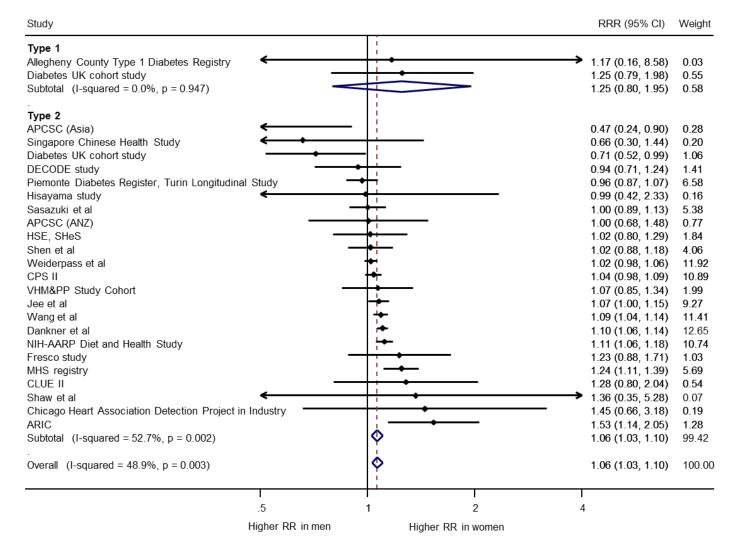


ESM Figure 2. Multiple-adjusted relative risk for all-site cancer, comparing individuals with diabetes to those without diabetes by sex.

Studies that provided only age-adjusted results were excluded from the analysis.

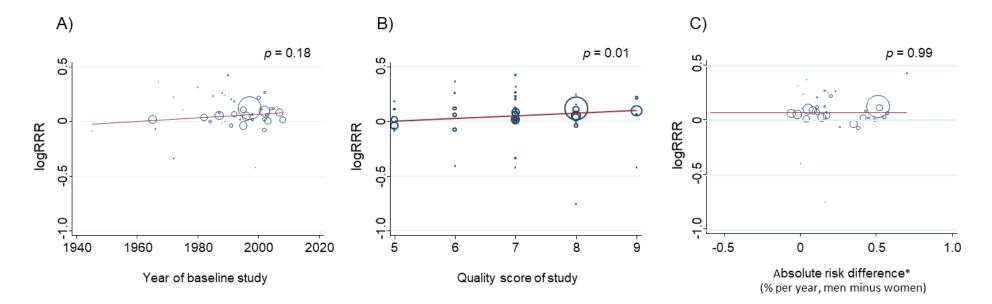
Abbreviations; CI, confidence interval; RR, relative risk.

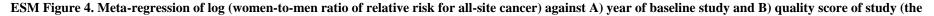
Men



ESM Figure 3. Multiple-adjusted women-to-men ratio of relative risk for all-site cancer, comparing individuals with diabetes to those without diabetes.

Studies that provided only age-adjusted results were excluded from the analysis.





Newcastle-Ottawa Scale) C) absolute risk difference between men and women for the data in Figure 3.

The circles for each study are drawn in proportion to the inverse variance. Abbreviations; RRR, ratio of relative risk.

* Ten study were excluded because absolute risks of men and women were unavailable.

Study	N of Individual	N of events	RRR	(95% CI)	Weight
Type 1					
Carstensen et al		9149	1.06	(1.02, 1.10)	9.75
Hsu et al	14619	760	1.09	(0.94, 1.26)	2.17
Subtotal (I-squared = 0.0%, p = 0.696)			1.06	(1.02, 1.10)	11.92
Type 2					
Ragozzino et al	1135	120	0.92	(0.63, 1.34)	0.37
Sasazuki et al	339459	33022		(0.89, 1.13)	3.00
Gini et al	32247	2069	1.02	(0.93, 1.12)	4.42
Berger et al	4826142	423942	→ 1.05	(1.01, 1.09)	9.79
Diabetes II-to-Cancer	26742	1364	1.06	(0.96, 1.18)	3.71
VHM&PP Study Cohort	140813	5212	1.07	(0.85, 1.34)	0.95
Jee et al	1298385	53833	1.07	(1.00, 1.15)	6.33
Wang et al	327268	7435	1.09	(1.04, 1.14)	8.90
Adami et al	51008	2417	1.10	(0.96, 1.26)	2.35
Dankner et al	2186196	128720	1.10	(1.06, 1.14)	10.74
NIH-AARP Diet and Health Study	494867	82251	1.11	(1.06, 1.18)	8.02
Xu et al	36379	1205	1.13	(1.00, 1.26)	3.16
DRT	5709	525	1.13	(0.94, 1.35)	1.52
NDSS	872706	70406	♦ 1.13	(1.11, 1.15)	13.15
Walker et al	80838	4285	1.19	(1.11, 1.28)	6.11
MHS registry	100595	8977	1.24	(1.11, 1.39)	3.21
CLUE II	18280	2481	1.28	(0.80, 2.04)	0.24
Zhang et al	7950	366		(1.06, 1.60)	1.16
Västerbotten Intervention Project	68301	2669		(0.93, 2.00)	0.36
ARIC	12792	2657	→ 1.53	(1.14, 2.05)	0.60
Subtotal (I-squared = 49.6%, p = 0.006	š)		♦ 1.11	(1.08, 1.13)	88.08
Overall (I-squared = 51.3%, p = 0.003)	l I		1.10	(1.07, 1.13)	100.00
		.5	1 2		
		Hig	er RR in men Higher RR in women		

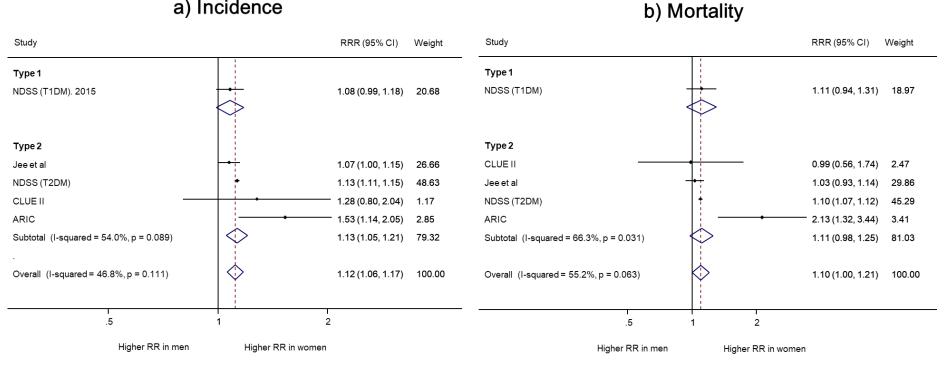
ESM Figure 5. Maximum available-adjusted women-to-men ratio of relative risk for all-site cancer incidence, comparing individuals with diabetes to those without diabetes.

	N of individuals	N of events		RRR (95% C	21)	Weight
NDSS Allegheny County Type 1 Diabetes Registry	1385 80676 1075 23326	2 ← 593 10 ← 89			.31) 3.58) .98)	0.02 3.30 0.03 0.56 3.91
Singapore Chinese Health Study Poole Diabetes Study Diabetes UK cohort study JPHC NHIS-NSC DECODE study Tseng, et al Piemonte Diabetes Register, Turin Longitudinal Study CLUE II Hisayama study APCSC (ANZ) Forssas et al Fedeli et al HSE, SHeS Shen et al Weiderpass et al Jee et al CPS II Verona Diabetes Study NDSS Sievers et al 2001 ENTRED study BRFSS Fresco study Wong et al Bruno et al Shaw et al Moss et al Takayama study Chicago Heart Association Detection Project in Industry	89468 7388 736 5040 99584 29807 44655 256036 906065 18280 2438 82913 5300484 167621 204533 66813 144427 1298385 1053831 144427 1298385 1053831 7148 872706 5131 9101 9074 55283 4186 1967 9179 1772 29079 20755 12792	1800 388 45 185 5288 8098 26251 907 229 2563 54461 5110 5571 6336 9661 26473 120221 641 26333 40 380 850 131 107 92 853 513 887		- 0.47 (0.24, 0 0.66 (0.30, 1 0.66 (0.16, 2 0.71 (0.52, 0 0.83 (0.64, 1 0.93 (0.84, 1 0.94 (0.71, 1 0.96 (0.87, 1 0.99 (0.56, 1 1.09 (0.68, 1 1.02 (0.80, 1 1.02 (0.98, 1 1.03 (0.99, 1 1.03 (0.99, 1 1.03 (0.99, 1)	.44) .777) .999) .033) .24) .071) .74) .333) .48) .06) .077) .74) .333) .48) .06) .12) .12) .377) .12) .377) .600) .714) .099 .229) .18) .06) .14) .099 .24) .18) .299 .199 .299 .299 .299 .199 .298 .295 .298 .295 .298 .295 .298 .295 .298 .295 .298 .295 .298 .295 .298 .295 .298 .295 .298 .296 .296	$\begin{array}{c} 0.28\\ 0.20\\ 0.06\\ 1.06\\ 1.583\\ 1.40\\ 9.30\\ 5.83\\ 0.37\\ 0.17\\ 0.77\\ 8.96\\ 8.55\\ 1.80\\ 3.79\\ 9.52\\ 5.79\\ 8.86\\ 3.41\\ 10.50\\ 0.08\\ 2.38\\ 1.35\\ 1.03\\ 0.97\\ 0.74\\ 0.07\\ 0.47\\ 0.34\\ 0.20\\ 0.52\\ 96.09\\ 100.00\\ \end{array}$
		.25	I .5 1 Higher RR in men	I I 2 4 Higher RR in women		

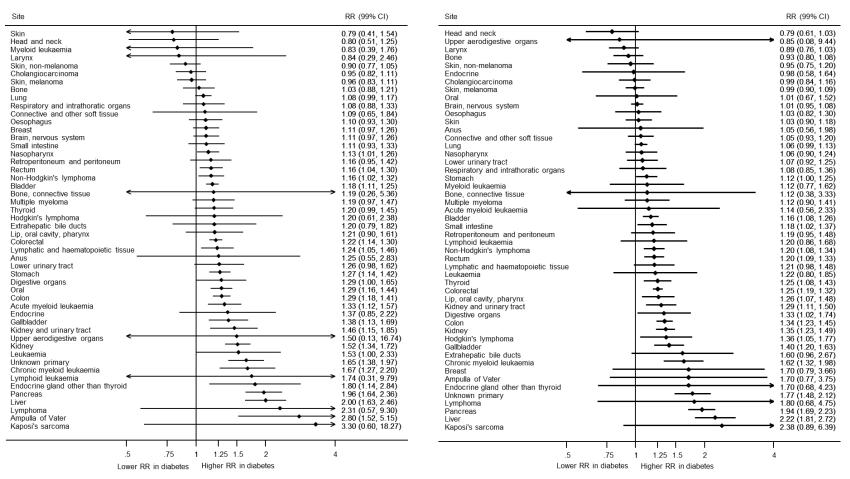
ESM Figure 6. Maximum available-adjusted women-to-men ratio of relative risk for all-site cancer mortality, comparing individuals with diabetes to those without

diabetes.

a) Incidence



ESM Figure 7. Maximum available-adjusted women-to-men ratio of relative risk for all-site cancer A) incidence and B) mortality for individuals with and without diabetes in studies which provided the results on both incidence and mortality from the same study.

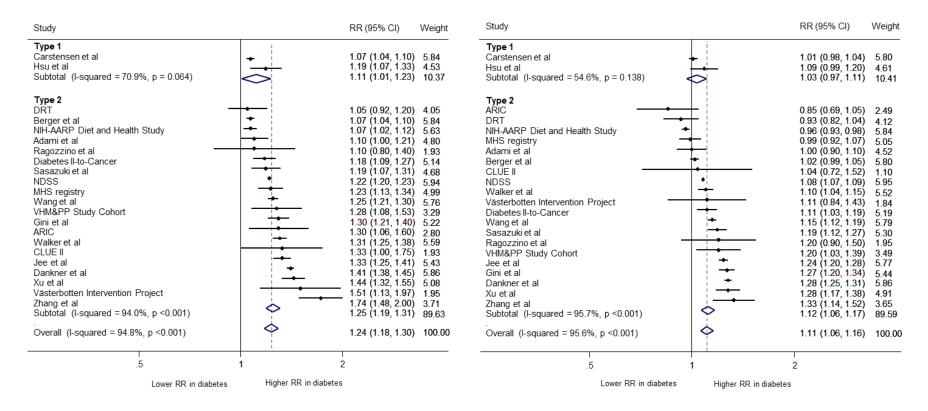


ESM Figure 8. Maximum available-adjusted pooled relative risk for cancer at each site, comparing individuals with diabetes to those without diabetes by sex.

Abbreviations; CI, confidence interval; RR, relative risk.

Men

Men



ESM Figure 9. Maximum available-adjusted relative risk for all-site cancer incidence, comparing individuals with diabetes to those without diabetes by sex.

Abbreviations; CI, confidence interval; RR, relative risk.

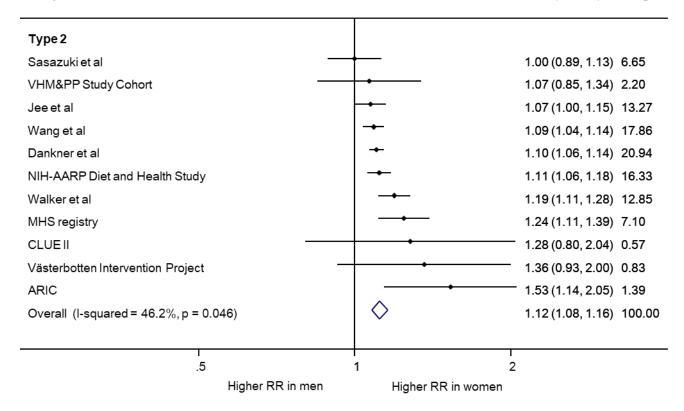
Men

Study	RR (95% (CI) Weight	Study		RR (95% CI)	Weight
Туре 2			Туре 2			
NIH-AARP Diet and Health Study	→ 1.07 (1.02	, 1.12) 11.75	ARIC	•	0.85 (0.69, 1.05)	6.54
Sasazuki et al	1.19 (1.07	, 1.31) 9.77	NIH-AARP Diet and Health Study	+	0.96 (0.93, 0.98)	11.20
MHS registry	1.23 (1.13	, 1.34) 10.42	MHS registry		0.99 (0.92, 1.07)	10.35
Wang et al		, 1.30) 12.02	CLUEII		1.04 (0.72, 1.52)	3.42
VHM&PP Study Cohort	1.28 (1.08	, 1.53) 6.88	Walker et al	-	1.10 (1.04, 1.15)	10.87
ARIC	1.30 (1.06	, 1.60) 5.84	Västerbotten Intervention Project		1.11 (0.84, 1.43)	5.21
Walker et al	1.31 (1.25	, 1.38) 11.67	Wang et al	-	1.15 (1.12, 1.19)	11.16
CLUEII	• 1.33 (1.00	, 1.75) 4.03	Sasazuki et al		1.19 (1.12, 1.27)	10.63
Jee et al		, 1.41) 11.34	VHM&PP Study Cohort		1.20 (1.03, 1.39)	8.25
Dankner et al	+ 1.41 (1.38	, 1.45) 12.23	Jee et al	+	1.24 (1.20, 1.28)	11.14
Västerbotten Intervention Project		1.97) 4.07	Dankner et al	+	1.28 (1.25, 1.31)	11.23
Overall (I-squared = 91.6%, p <0.001)	1.27 (1.19	, 1.36) 100.00	Overalll (I-squared = 96.8%, p <0.001)	\diamond	1.11 (1.02, 1.20)	100.00
· .5	1 2		· .5	1	2	
Lower RR in diabetes	Higher RR in diabetes		Lower RR in o	diabetes Higher RR in	diabetes	

ESM Figure 10. Multiple-adjusted relative risk for all-site cancer incidence, comparing individuals with diabetes to those without diabetes by sex.

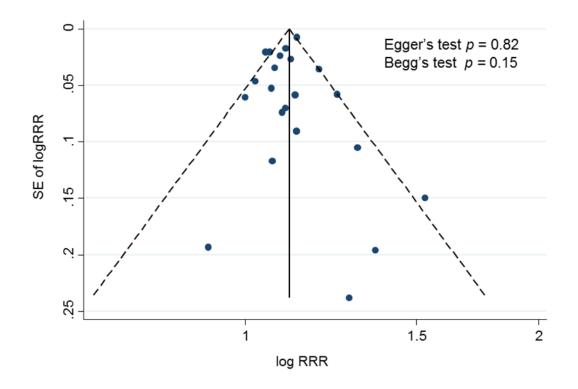
Studies that provided only age-adjusted results were excluded from the analysis.

Abbreviations; CI, confidence interval; RR, relative risk.



ESM Figure 11. Multiple-adjusted women-to-men ratio of relative risk for all-site cancer incidence, comparing individuals with diabetes to those without diabetes.

Studies that provided only age-adjusted results were excluded from the analysis.

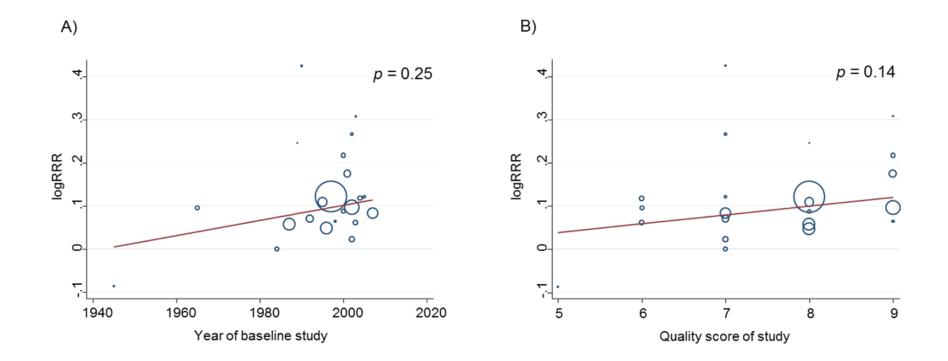


ESM Figure 12. Funnel plot with pseudo 95% confidence limits for the data in Supplementary Figure 5. Abbreviations; RRR, ratio of relative risk; SE, standard error.

Category		RRR (95% CI) j	P for interaction
Study region Non-Asia Asia	++++	1.11 (1.07, 1.14) 1.09 (1.07, 1.12)	0.64
Year of baseline study * Pre-1985 — 1986 onwards	÷	1.08 (0.95, 1.23) 1.11 (1.08, 1.13)	0.73
Ascertainment of diabetes Self-reported only Others		1.08 (0.99, 1.18) 1.11 (1.07, 1.13)	0.72
Type of diabetes Type 1 Type 2	 -+	1.06 (1.02, 1.10) 1.11 (1.08, 1.13)	0.33
Level of adjustment Age-adjusted Multiple-adjusted	→	1.08 (1.05, 1.12) 1.12 (1.08, 1.16)	0.27
Quality score of study Lower score (<7 points) Higher score (≥7 points)		1.09 (1.02, 1.16) 1.10 (1.07, 1.13)	0.75
0.75	1 1.25	1.5	
Higher RR in men	Higher RR in	women	

ESM Figure 13. Subgroup analyses of women-to-men ratio of relative risk for all-site cancer incidence, comparing individuals with diabetes to those without diabetes.

* One study were excluded because baseline year bridged over 1985.



ESM Figure 14. Meta-regression of log (women-to-men ratio of relative risk for all-site cancer incidence) against A) year of baseline study and B) quality score of study (the Newcastle-Ottawa Scale) for the data in Supplementary Figure 5.

The circles for each study are drawn in proportion to the inverse variance.

Abbreviations; RRR, ratio of relative risk.

Study	RR (95% CI) Weight	Study	RR (95% CI) Weight
Type 1 DERI Mortality Study Diabetes UK cohort study NDSS Allegheny County Type 1 Diabetes Registry Subtotal (I-squared = 26.9%, p = 0.251)	$\begin{array}{cccccc} 0.40 & (0.00, 2.10) & 0.15 \\ 1.00 & (0.70, 1.40) & 2.05 \\ 1.32 & (1.17, 1.49) & 4.17 \\ - & 1.40 & (0.20, 2.50) & 0.25 \\ 1.19 & (0.95, 1.50) & 6.62 \end{array}$	Type 1 DERI Mortality Study Diabetes UK cohort study NDSS Allegheny County Type 1 Diabetes Registry Subtotal (I-squared = 53.0%, p = 0.094)	0.60 (0.00, 3.30) 0.18 0.80 (0.60, 1.10) 2.45 1.19 (1.07, 1.33) 3.80 1.20 (0.10, 2.20) 0.22 1.00 (0.73, 1.37) 6.66
Type 2 Diabetes UK cohort study Wong et al APCSC (Asia) Sievers et al JPHC Moss et al CPSII Shen et al NDSS Verona Diabetes Study Singapore Chinese Health Study APCSC (ANZ) HSE, SHeS Bruno et al Tseng, et al Jee et al Piermonte Diabetes Register, Turin Longitudinal Study Fedeli et al CLUE II DECODE study 2001 ENTRED study Poress et al Fresco study NHIS-NSC BRFSS Chicago Heart Association Detection Project in Industry Takayama study Poole Diabetes Study Subtotal (I-squared = 94.6%, p <0.001)	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Type 2 Wong et al Moss et al Sievers et al ARIC Diabetes UK cohort study Bruno et al NDSS CPS II Verona Diabetes Study Shaw et al Shen et al APCSC (ANZ) HSE, SHeS JPHC 2001 ENTRED study Jee et al Chicago Heart Association Detection Project in Industry Fedeli et al Takayama study Tseng, et al Presco study CLUE II Piemonte Diabetes Register, Turin Longitudinal Study DECODE study Forsas et al Singapore Chinese Health Study NHIS-NSC APCSC (Aia) Hisayama study Forsat et al Singapore Chinese Health Study NHIS-NSC APCSC (Aia) Hisayama study Forsat et al Singapore Chinese Health Study NHIS-NSC APCSC (Aia) Hisayama study Forsat et al Subtotal (I-squared = 97.5%, p <0.001)	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
.25 .5 1 2	4	.25 .5 1	2 4
Lower RR in diabetes Higher RR	in diabetes	Lower RR in diabetes Higher	RR in diabetes

ESM Figure 15. Maximum available-adjusted relative risk for all-site cancer mortality, comparing individuals with diabetes to those without diabetes by sex.

Abbreviations; CI, confidence interval; RR, relative risk.

Men



Study	RR (95% CI) Weight	Study	RR (95'	% CI)	Weight
Type 1 Diabetes UK cohort study The Allegheny County Type 1 Diabetes Registry Subtotal (I-squared = 0.0%, p = 0.615)		Type 1 Diabetes UK cohort study The Allegheny County Type 1 Diabetes Registry Subtotal (I-squared = 0.0%, p = 0.614)	1.20 (0.		4.16 0.33 4.49
Type 2 Diabetes UK cohort study APCSC (Asia) JPHC CPS II Shen et al Singapore Chinese Health Study APCSC (ANZ) HSE, SHeS Jee et al Piemonte Diabetes Register, Turin Longitudinal Study DECODE study CLUE II Shaw et al Weiderpass et al Fresco study Chicago Heart Association Detection Project in Industry Takayama study ARIC Hisayama study Subtotal (I-squared = 92.0%, p < 0.001)	0.70 (0.54, 0.90) 5.58 0.97 (0.56, 1.69) 2.52 1.04 (0.82, 1.32) 5.83 1.11 (1.06, 1.15) 8.16 1.12 (1.02, 1.24) 7.72 1.17 (0.62, 2.19) 2.10 1.22 (0.89, 1.68) 4.71 1.27 (1.05, 1.54) 6.50 1.31 (1.20, 1.44) 7.78 1.33 (1.23, 1.44) 7.78 1.35 (1.08, 1.68) 6.08 1.35 (1.08, 1.68) 6.08 1.35 (1.08, 1.68) 6.08 1.35 (1.08, 1.68) 8.21 1.54 (1.49, 1.58) 8.21 1.68 (1.29, 2.20) 5.42 1.88 (1.16, 3.05) 3.04 1.96 (1.40, 2.76) 4.47 2.04 (1.00, 4.16) 1.74 1.29 (1.16, 1.44) 94.97	Type 2 ARIC Diabetes UK cohort study CPS II Shen et al Shaw et al APCSC (ANZ) JPHC HSE, SHeS Jee et al Chicago Heart Association Detection Project in Industry Takayama study CLUE II Fresco study Piemonte Diabetes Register, Turin Longitudinal Study DECODE study Weiderpass et al Singapore Chinese Health Study APCSC (Asia) Hisayama study Subtotal (I-squared = 93.4%, p <0.001)	0.98 (0. 1.07 (1. 1.10 (0. 1.10 (0. 1.21 (0. 1.25 (1. 1.25 (1. 1.25 (1. 1.33 (0. 1.33 (0. 1.37 (1. 1.38 (1. 1.)38 (1. 1.)38 (1. 1.)38 (1. 1.)38 (1. 1.)38 (1. 1.)38 (1. 1.)38 (1.	80, 1.20) 04, 1.21) 98, 1.22) 40, 3.60) 97, 1.51) 11, 1.42) 10, 1.47) 22, 1.33) 80, 2.03) 94, 1.87) 93, 2.04) 13, 1.67) 29, 1.46) 21, 1.70) 46, 1.55) 12, 2.82) 47, 2.91) 28, 3.35)	3.73 5.57 7.63 6.93 0.63 5.31 6.75 6.44 7.57 2.55 3.67 3.16 5.69 7.44 6.07 7.64 2.58 3.69 2.58 3.69 2.54 95.51
Overall (I-squared = 91.2%, p <0.001)	1.28 (1.15, 1.42) 100.00	Overall (I-squared = 92.9%, p <0.001)	1.27 (1.	.16, 1.39)	100.00
.5 1 2		.5	1 2		
Lower RR in diabetes Higher RF	R in diabetes	Lower RR in diabetes	Higher RR in diabetes		

ESM Figure 16. Multiple-adjusted relative risk for all-site cancer mortality, comparing individuals with diabetes to those without diabetes by sex.

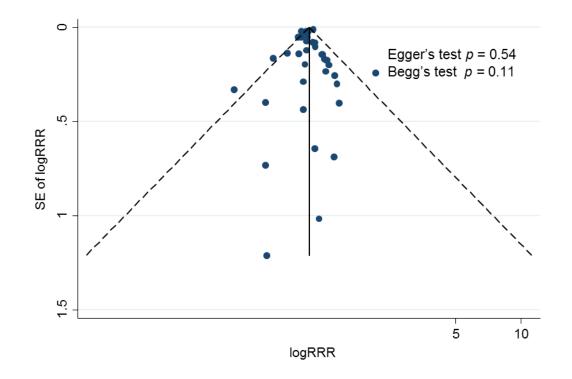
Studies that provided only age-adjusted results were excluded from the analysis.

Abbreviations; CI, confidence interval; RR, relative risk.

Diabetes UK cohort study Subtotal (I-squared = 35.3%, p = 0.065) Diabetes UK cohort study Lispical and a constraint of the set of	Туре 1					
Subtotal (I-squared = 0.0%, p = 0.947) 1.25 (0.80, 1.95) 1.23 Type 2 0.47 (0.24, 0.90) 0.59 APCSC (Asia) 0.47 (0.24, 0.90) 0.59 Singapore Chinese Health Study 0.66 (0.30, 1.44) 0.42 Diabetes UK cohort study 0.71 (0.52, 0.99) 2.23 JPHC 0.83 (0.64, 1.09) 3.17 DECODE study 0.94 (0.71, 1.24) 2.96 Piemonte Diabetes Register, Turin Longitudinal Study 0.96 (0.87, 1.07) 13.10 CLUE II 0.99 (0.42, 2.33) 0.34 HSE, SHeS 1.00 (0.68, 1.48) 1.61 Shen et al 1.02 (0.88, 1.18) 8.30 Weiderpass et al 1.02 (0.88, 1.18) 8.30 Jee et al 1.02 (0.88, 1.18) 8.30 CPS II 1.36 (0.35, 5.28) 0.14 Takayama study 1.23 (0.88, 17.1) 2.17 Shew et al 1.02 (0.84, 1.18) 8.30 Subtotal (I-squared = 30.0%, p = 0.065) 1.01 (0.96, 1.06) 90.7 Overall (I-squared = 30.0%, p = 0.096) 1.01 (0.96, 1.06) 100.0	The Allegheny County Type 1 Diabetes Registry		•		→ 1.17 (0.16, 8.58)	0.06
Type 2 APCSC (Asia) Singapore Chinese Health Study Diabetes UK cohort study JPHC DECODE study Piemonte Diabetes Register, Turin Longitudinal Study CLUE II O.99 (0.56, 1.74) 0.77 O.99 (0.56, 1.74) 0.77 O.99 (0.42, 2.33) 0.34 PCSC (ANZ) Det et al CPS II Fresco study Fresco study Singapara study CPS II Fresco study Shaw et al Subtotal (I-squared = 30.0%, p = 0.096) Coverall (I-squared = 30.0%, p = 0.096) Coverall (I-squared = 30.0%, p = 0.096) 	Diabetes UK cohort study				1.25 (0.79, 1.98)	1.17
APCSC (Asia) 0.47 (0.24, 0.90) 0.59 Singapore Chinese Health Study 0.66 (0.30, 1.44) 0.42 Diabetes UK cohort study 0.71 (0.52, 0.99) 2.23 DECODE study 0.99 (0.66, 1.74) 0.77 Piemonte Diabetes Register, Turin Longitudinal Study 0.99 (0.65, 1.74) 0.77 CLUE II 0.99 (0.56, 1.74) 0.77 Hisayama study 0.99 (0.42, 2.33) 0.34 APCSC (ANZ) 1.00 (0.68, 1.48) 161 HSE, SHeS 1.02 (0.88, 1.48) 161 Shen et al 1.02 (0.88, 1.18) 8.30 Weiderpass et al 1.02 (0.88, 1.18) 8.30 Jee et al 1.02 (0.88, 1.14) 13.00 CPS II 1.04 (0.98, 1.09) 22.77 Shaw et al 1.02 (0.88, 1.14) 13.00 Takayama study 1.41 (0.78, 2.56) 0.71 Chicago Heart Association Detection Project in Industry 1.45 (0.66, 3.18) 0.41 ARIC 1.01 (0.96, 1.06) 100.0 Subtotal (I-squared = 30.0%, p = 0.096) 1.01 (0.96, 1.06) 100.0	Subtotal (I-squared = 0.0%, p = 0.947)		$\langle \rangle$		1.25 (0.80, 1.95)	1.23
Singapore Chinese Health Study 0.66 (0.30, 1.44) 0.42 Diabetes UK cohort study 0.71 (0.52, 0.99) 2.23 JPHC 0.94 (0.71, 1.24) 2.96 DecoDE study 0.96 (0.87, 1.07) 13.14 PHC 0.99 (0.56, 1.74) 0.79 DECODE study 0.99 (0.42, 2.33) 0.34 PHC 0.99 (0.42, 2.33) 0.34 APCSC (ANZ) 0.99 (0.42, 2.33) 0.34 HSE, SHeS 1.02 (0.88, 1.18) 8.30 Weiderpass et al 1.02 (0.88, 1.18) 8.30 Jee et al 1.02 (0.88, 1.14) 1.30 CPS II 1.04 (0.98, 1.09) 20.91 Takayama study 1.41 (0.78, 2.56) 0.71 Shaw et al 1.36 (0.35, 5.28) 0.14 Takayama study 1.41 (0.78, 2.56) 0.71 Chicago Heart Association Detection Project in Industry 1.41 (0.78, 2.56) 0.71 ARIC 1.01 (0.96, 1.06) 10.01 0.98 Subtotal (I-squared = 35.3%, p = 0.085) 1.01 (0.96, 1.06) 100.01 Overall (I-squared = 30.0%, p = 0.096) 1.01 (0.96, 1.06) 100.01	Type 2					
Diabeles UK cohort study JPHC DECODE study Piemonte Diabetes Register, Turin Longitudinal Study CLUE II Hisayama study APCSC (ANZ) HSE, SHeS Shen et al Weiderpass et al Jee et al CPS II Fresco study Shaw et al Takayama study Chicago Heart Association Detection Project in Industry ARIC Subtotal (I-squared = 35.3%, p = 0.065) Overall (I-squared = 30.0%, p = 0.096)	APCSC (Asia)	•	-1		0.47 (0.24, 0.90)	0.59
JPHC 0.83 (0.64, 1.09) 3.17 DECODE study 0.94 (0.71, 1.24) 2.96 Piemonte Diabetes Register, Turin Longitudinal Study 0.96 (0.87, 1.07) 13.16 CLUE II 0.99 (0.56, 1.74) 0.77 Hisayama study 0.99 (0.42, 2.33) 0.34 APCSC (ANZ) 1.00 (0.68, 1.48) 1.61 HSE, SHeS 1.02 (0.80, 1.29) 3.84 Shen et al 1.02 (0.88, 1.18) 8.30 Weiderpass et al 1.02 (0.88, 1.18) 8.30 Jee et al 1.03 (0.93, 1.14) 13.00 CPS II 1.04 (0.98, 1.09) 20.95 Fresco study 1.23 (0.88, 1.71) 2.17 Shaw et al 1.04 (0.98, 1.09) 20.95 Takayama study 1.45 (0.66, 3.18) 0.41 Chicago Heart Association Detection Project in Industry 1.45 (0.66, 3.18) 0.41 ARIC 2.13 (1.32, 3.44) 1.08 Subtotal (I-squared = 35.3%, p = 0.065) 1.01 (0.96, 1.06) 100.0 Overall (I-squared = 30.0%, p = 0.096) 1.01 (0.96, 1.06) 100.0	Singapore Chinese Health Study	+	<u> </u>		0.66 (0.30, 1.44)	0.42
DECODE study 0.94 (0.71, 1.24) 2.96 Piemonte Diabetes Register, Turin Longitudinal Study 0.96 (0.87, 1.07) 13.10 CLUE II 0.99 (0.56, 1.74) 0.77 Hisayama study 0.99 (0.42, 2.33) 0.34 APCSC (ANZ) 1.00 (0.68, 1.48) 1.61 HSE, SHeS 1.02 (0.80, 1.29) 3.84 Shen et al 1.02 (0.88, 1.18) 8.30 Weiderpass et al 1.02 (0.88, 1.18) 8.30 Jee et al 1.03 (0.93, 1.14) 13.00 CPS II 1.04 (0.98, 1.09) 20.99 Fresco study 1.23 (0.88, 1.71) 2.17 Shaw et al 1.04 (0.98, 1.09) 20.99 Takayama study 1.45 (0.66, 3.18) 0.41 Chicago Heart Association Detection Project in Industry 1.45 (0.66, 3.18) 0.41 ARIC 2.13 (1.32, 3.44) 1.08 Subtotal (I-squared = 35.3%, p = 0.065) 1.01 (0.96, 1.06) 100.0 Overall (I-squared = 30.0%, p = 0.096) 1.01 (0.96, 1.06) 100.0	Diabetes UK cohort study	•			0.71 (0.52, 0.99)	2.23
Piermonte Diabetes Register, Turin Longitudinal Study CLUE II Hisayama study APCSC (ANZ) HSE, SHeS Shen et al Weiderpass et al Jee et al CPS II Fresco study Shaw et al Takayama study ARIC Subtotal (I-squared = 35.3%, p = 0.065) Overall (I-squared = 30.0%, p = 0.096)	JPHC		•		0.83 (0.64, 1.09)	3.17
CLUE II 0.99 (0.56, 1.74) 0.77 Hisayama study 0.99 (0.42, 2.33) 0.34 APCSC (ANZ) 1.00 (0.68, 1.48) 1.61 HSE, SHeS 1.02 (0.80, 1.29) 3.84 Shen et al 1.02 (0.88, 1.18) 8.30 Weiderpass et al 1.02 (0.98, 1.06) 22.74 Jee et al 1.03 (0.93, 1.14) 13.00 CPS II 1.04 (0.98, 1.09) 20.99 Fresco study 1.23 (0.88, 1.71) 2.17 Shaw et al 1.23 (0.88, 1.71) 2.17 Takayama study 1.45 (0.66, 3.18) 0.41 Chicago Heart Association Detection Project in Industry 1.45 (0.66, 3.16) 0.41 ARIC 2.13 (1.32, 3.44) 1.08 Subtotal (I-squared = 30.0%, p = 0.096) 1.01 (0.96, 1.06) 100.0 Indicate and another and another and another	DECODE study	-			0.94 (0.71, 1.24)	2.96
Hisayama study APCSC (ANZ) HSE, SHeS Shen et al Weiderpass et al Jee et al CPS II Fresco study Shaw et al Takayama study Chicago Heart Association Detection Project in Industry ARIC Subtotal (I-squared = 35.3%, p = 0.065) Overall (I-squared = 30.0%, p = 0.096) HSE (I-	Piemonte Diabetes Register, Turin Longitudinal Study		4		0.96 (0.87, 1.07)	13.16
APCSC (ANZ) HSE, SHeS Shen et al Weiderpass et al Jee et al CPS II Fresco study Shaw et al Takayama study Chicago Heart Association Detection Project in Industry ARIC Subtotal (I-squared = 35.3%, p = 0.065) Overall (I-squared = 30.0%, p = 0.096) I I I I I I I I I I I I I I I I I I I	CLUE II		-		0.99 (0.56, 1.74)	0.77
HSE, SHeS Shen et al Weiderpass et al Jee et al CPS II Fresco study Shaw et al Takayama study Chicago Heart Association Detection Project in Industry ARIC Subtotal (I-squared = 35.3%, p = 0.065) Overall (I-squared = 30.0%, p = 0.096)	Hisayama study		-	-	0.99 (0.42, 2.33)	0.34
Shen et al 1.02 (0.88, 1.18) 8.30 Weiderpass et al 1.02 (0.98, 1.18) 8.30 Jee et al 1.03 (0.93, 1.14) 13.00 CPS II 1.04 (0.98, 1.09) 20.99 Fresco study 1.23 (0.88, 1.71) 2.17 Shaw et al 1.36 (0.35, 5.28) 0.14 Takayama study 1.41 (0.78, 2.56) 0.71 Chicago Heart Association Detection Project in Industry 1.45 (0.66, 3.18) 0.41 ARIC 2.13 (1.32, 3.44) 1.08 Subtotal (I-squared = 35.3%, p = 0.065) 1.01 (0.96, 1.06) 98.77 Overall (I-squared = 30.0%, p = 0.096) 1.01 (0.96, 1.06) 100.0	APCSC (ANZ)	-			1.00 (0.68, 1.48)	1.61
Weiderpass et al 1.02 (0.98, 1.06) 22.74 Jee et al 1.03 (0.93, 1.14) 13.00 CPS II 1.04 (0.98, 1.09) 20.99 Fresco study 1.04 (0.98, 1.09) 20.99 Shaw et al 1.36 (0.35, 5.28) 0.14 Takayama study 1.41 (0.78, 2.56) 0.71 Chicago Heart Association Detection Project in Industry 1.45 (0.66, 3.18) 0.41 ARIC 2.13 (1.32, 3.44) 1.08 Subtotal (I-squared = 35.3%, p = 0.065) 1.01 (0.96, 1.06) 98.77 Overall (I-squared = 30.0%, p = 0.096) 1.01 (0.96, 1.06) 100.0	HSE, SHeS		—		1.02 (0.80, 1.29)	3.84
Jee et al 1.03 (0.93, 1.14) 13.00 CPS II 1.04 (0.98, 1.09) 20.99 Fresco study 1.03 (0.35, 5.28) 0.14 Shaw et al 1.36 (0.35, 5.28) 0.14 Takayama study 1.41 (0.78, 2.56) 0.71 Chicago Heart Association Detection Project in Industry 1.45 (0.66, 3.18) 0.41 ARIC 2.13 (1.32, 3.44) 1.08 Subtotal (I-squared = 35.3%, p = 0.065) 1.01 (0.96, 1.06) 98.77 Overall (I-squared = 30.0%, p = 0.096) 1.01 (0.96, 1.06) 100.0	Shen et al		+		1.02 (0.88, 1.18)	8.30
CPS II 1.04 (0.98, 1.09) 20.99 Fresco study 1.23 (0.88, 1.71) 2.17 Shaw et al 1.36 (0.35, 5.28) 0.14 Takayama study 1.41 (0.78, 2.56) 0.71 Chicago Heart Association Detection Project in Industry 1.45 (0.66, 3.18) 0.41 ARIC 2.13 (1.32, 3.44) 1.08 Subtotal (I-squared = 35.3%, p = 0.065) 1.01 (0.96, 1.06) 98.77 Overall (I-squared = 30.0%, p = 0.096) 1.01 (0.96, 1.06) 100.0	Weiderpass et al		†		1.02 (0.98, 1.06)	22.78
Fresco study 1.23 (0.88, 1.71) 2.17 Shaw et al 1.36 (0.35, 5.28) 0.14 Takayama study 1.41 (0.78, 2.56) 0.71 Chicago Heart Association Detection Project in Industry 1.45 (0.66, 3.18) 0.41 ARIC 2.13 (1.32, 3.44) 1.08 Subtotal (I-squared = 35.3%, p = 0.065) 1.01 (0.96, 1.06) 98.77 Overall (I-squared = 30.0%, p = 0.096) 1.01 (0.96, 1.06) 100.0	Jee et al		+		1.03 (0.93, 1.14)	13.08
Shaw et al 1.36 (0.35, 5.28) 0.14 Takayama study 1.45 (0.66, 3.18) 0.41 Chicago Heart Association Detection Project in Industry 1.45 (0.66, 3.18) 0.41 ARIC 1.31 (1.32, 3.44) 1.08 Subtotal (I-squared = 35.3%, p = 0.065) 1.01 (0.96, 1.06) 98.77 Overall (I-squared = 30.0%, p = 0.096) 1.01 (0.96, 1.06) 100.0	CPS II		•		1.04 (0.98, 1.09)	20.99
Takayama study 1.41 (0.78, 2.56) 0.71 Chicago Heart Association Detection Project in Industry 1.45 (0.66, 3.18) 0.41 ARIC 2.13 (1.32, 3.44) 1.08 Subtotal (I-squared = 35.3%, p = 0.065) 1.01 (0.96, 1.06) 98.71 Overall (I-squared = 30.0%, p = 0.096) 1.01 (0.96, 1.06) 100.0	Fresco study		+		1.23 (0.88, 1.71)	2.17
Chicago Heart Association Detection Project in Industry 1.45 (0.66, 3.18) 0.41 ARIC 2.13 (1.32, 3.44) 1.08 Subtotal (I-squared = 35.3%, p = 0.065) 1.01 (0.96, 1.06) 98.77 Overall (I-squared = 30.0%, p = 0.096) 1.01 (0.96, 1.06) 100.0 I I .5 1	Shaw et al				1.36 (0.35, 5.28)	0.14
ARIC Subtotal (I-squared = 35.3%, p = 0.065) Overall (I-squared = 30.0%, p = 0.096)	Takayama study			_	1.41 (0.78, 2.56)	0.71
Subtotal (I-squared = 35.3%, p = 0.065) Overall (I-squared = 30.0%, p = 0.096) I.01 (0.96, 1.06) 98.77 1.01 (0.96, 1.06) 98.77 1.01 (0.96, 1.06) 100.0 I.01 (0.96, 1.06) I00.0 I.01 (0.96, 1.0	Chicago Heart Association Detection Project in Industry	_			1.45 (0.66, 3.18)	0.41
Overall (I-squared = 30.0%, p = 0.096) I I I .5 1 2	ARIC				2.13 (1.32, 3.44)	1.08
I I .5 1 2	Subtotal (I-squared = 35.3%, p = 0.065)		Ŷ		1.01 (0.96, 1.06)	98.77
	Overall (I-squared = 30.0%, p = 0.096)		•		1.01 (0.96, 1.06)	100.00
Higher RR in men Higher RR in women		.5	1 2			
	Higher I	RR in men	Higher RR	t in women		

ESM Figure 17. Multiple-adjusted women-to-men ratio of relative risk for all-site cancer mortality, comparing individuals with diabetes to those without diabetes.

Studies that provided only age-adjusted results were excluded from the analysis.



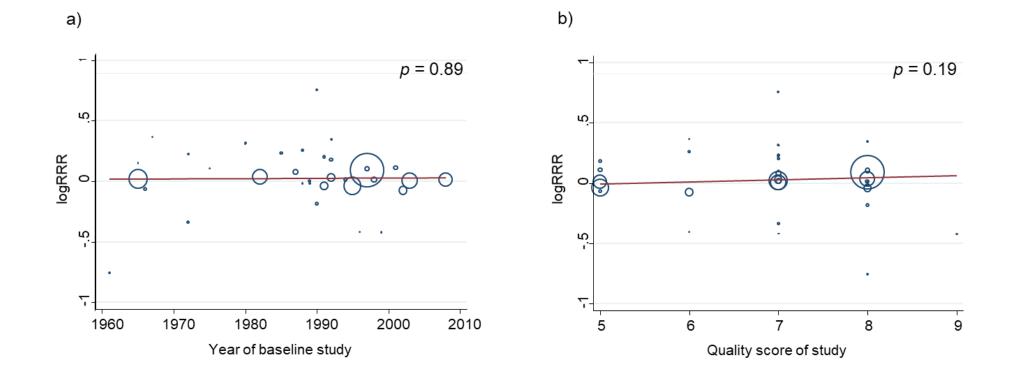
ESM Figure 18. Funnel plot with pseudo 95% confidence limits for the data in Supplementary Figure 6. Abbreviations; RRR, ratio of relative risk; SE, standard error.

Category		RRR (95% CI)	P for interaction
Study region Non-Asia Asia	+	1.05 (1.01, 1.08) 0.97 (0.91, 1.02)	
Year of baseline study * Pre-1985 1986 onwards	+	1.03 (1.00, 1.06 1.03 (0.99, 1.08	
Ascertainment of diabetes Self-reported only Others		1.04 (0.99, 1.09 1.02 (0.98, 1.07	′ UDZ
Type of diabetes Type 1 Type 2		1.12 (0.96, 1.31 1.02 (0.99, 1.06	
Level of adjustment Age-adjusted Multiple-adjusted		1.04 (0.99, 1.09 1.01 (0.96, 1.06	055
Qualitiy score of study Lower score (<7 points) Higher score (≥7 points)	-	0.99 (0.95, 1.04) 1.04 (1.00, 1.08)	0.18
l 0.75	1 1.25	1 1.5	
Higher RR in me	n Higher RR in won	nen	

ESM Figure 19. Subgroup analyses of women-to-men ratio of relative risk for all-site cancer mortality, comparing individuals with diabetes to those without

diabetes.

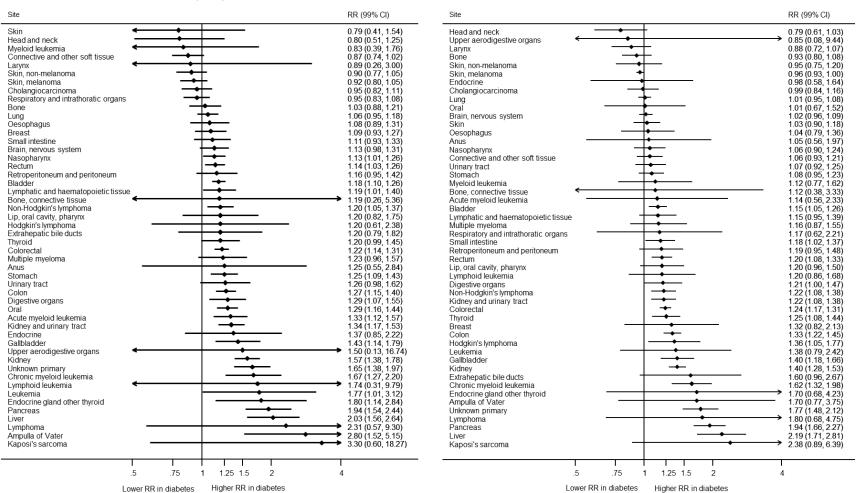
* 5 studies were excluded because baseline year bridged over 1985.



ESM Figure 20. Meta-regression of log (women-to-men ratio of relative risk for all-site cancer mortality) against A) year of baseline study and B) quality score of study (the Newcastle-Ottawa Scale) for the data in Supplementary Figure 6.

The circles for each study are drawn in proportion to the inverse variance.

Abbreviations; RRR, ratio of relative risk.

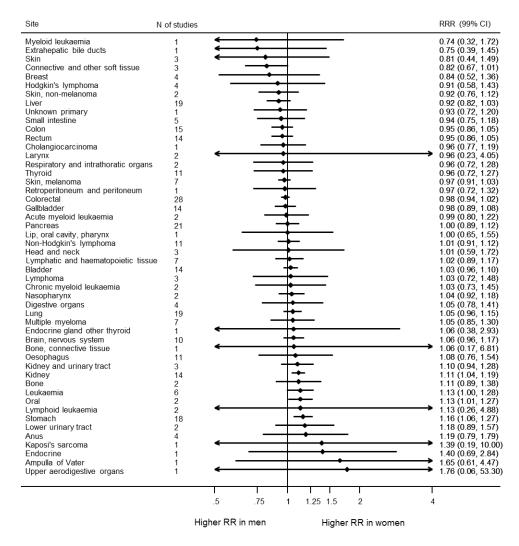


ESM Figure 21. Maximum available-adjusted pooled relative risk for incidence of cancer at each site, comparing individuals with diabetes to those without diabetes

by sex.

Abbreviations; CI, confidence interval; RR, relative risk.

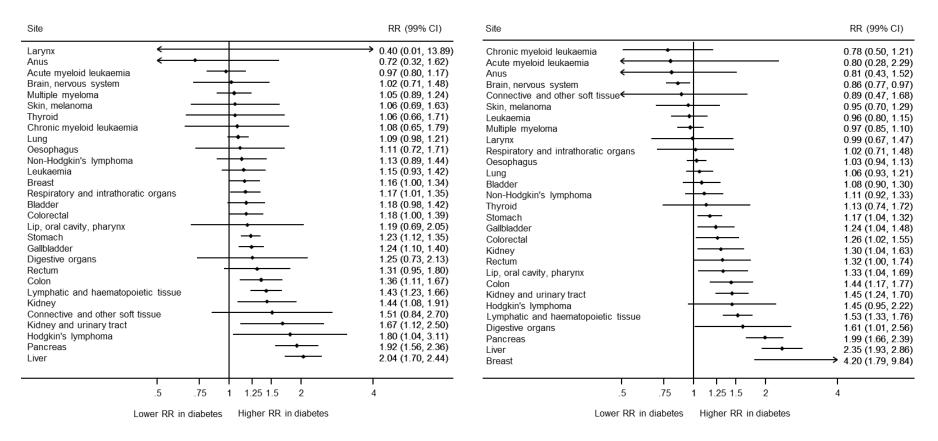
Men



ESM Figure 22. Maximum available-adjusted pooled women-to-men ratio of relative risk for incidence of cancer at each site, comparing individuals with diabetes

to those without diabetes.

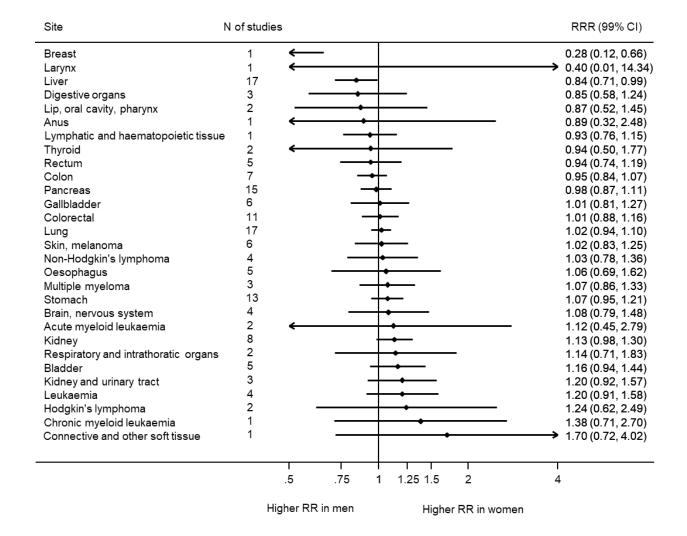
Men





diabetes by sex.

Abbreviations; CI, confidence interval; RR, relative risk.



ESM Figure 24. Maximum available-adjusted pooled women-to-men ratio of relative risk for mortality from cancer at each site, comparing individuals with

diabetes to those without diabetes.