

Legends of Online Supplementary Document

Table S1 List of International Classification of Diseases (ICD) codes mapped to the Global Burden of Disease cause list for neoplasms

Note: ICD= International Classification of Diseases.

Table S2 The incident cases and ASIR of 29 cancers among China, United States and Western Europe in 1990 and 2019, and the AAPC of ASIR from 1990 to 2019

Note: Estimates are for populations aged 55 years and above, both sexes combined. All malignant cancers are the sum of the following 29 cancers. Rates are reported per 100000 person-years. Cancer types are listed alphabetically. Other malignant neoplasms are cancers without a detailed GBD cause separately listed. UI=uncertainty interval. ASIR=age-standardized incidence rate. AAPC=average annual percentage change. CI = confidence interval. UI = uncertainty intervals.

Table S3 The death cases and ASDR of 29 cancers among China, United States and Western Europe in 1990 and 2019, and the AAPC of ASDR from 1990 to 2019

Note: Estimates are for populations aged 55 years and above, both sexes combined. All malignant cancers are the sum of the following 29 cancers. Rates are reported per 100000 person-years. Cancer types are listed alphabetically. Other malignant neoplasms are cancers without a detailed GBD cause separately listed. UI=uncertainty interval. ASDR=age-standardized death rate. AAPC=average annual percentage change. CI = confidence interval. UI = uncertainty intervals.

Table S4 The DALYs and DALY rate of 29 cancers among men and women over 55+ years old in China in 1990 and 2019, and percentage change in DALYs, annual rate of change in DALY rate from 1990 to 2019

Note: Estimates are for populations aged 55 years and above among men and women in China. Rates are reported per 100000 person-years. Cancer types are listed alphabetically. Other malignant neoplasms are cancers without a detailed GBD cause separately listed. DALYs=disability-adjusted life-years. UI=uncertainty interval.

Table S5 The death cases and death rate of 29 cancers among men and women over 55+ years old in China in 1990 and 2019, and percentage change in death cases, annual rate of change in death rate from 1990 to 2019

Note: Estimates are for populations aged 55 years and above among men and women in China. Rates are reported per 100000 person-years. Cancer types are listed alphabetically. Other malignant neoplasms are cancers without a detailed GBD cause separately listed. UI=uncertainty interval.

Table S6 The incident cases and incident rate of 29 cancers among men and women over 55+ years old in China in 1990 and 2019, and percentage change in incident cases, annual rate of change in incidence rate from 1990 to 2019

Note: Estimates are for populations aged 55 years and above among men and women in China. Rates are reported per 100000 person-years. Cancer types are listed alphabetically. Other malignant neoplasms are cancers without a detailed GBD cause separately listed. UI=uncertainty interval.

Table S7 The DALYs and DALY rate in the risks for 20 cancers among men in 1990 and 2019, and percentage change in DALYs, annual rate of change in DALY rate from 1990 to 2019

Note: Estimates are for populations aged 55 years and above among men in China. Rates are reported per 100000 person-years. Cancer types and risks are listed alphabetically. DALY=disability-adjusted life-year, UI=uncertainty interval.

Table S8 The DALYs and DALY rate in the risks for 22 cancers among women in 1990 and 2019, and percentage change in DALYs, annual rate of change in DALY rate from 1990 to 2019

Note: Estimates are for populations aged 55 years and above among women in China. Rates are reported per 100000 person-years. Cancer types and risks are listed alphabetically. DALY=disability-adjusted life-year, UI=uncertainty interval.

Figure S1 The changing trend of incidence rate (A) and the rank of incident cases (B) for 29 cancers in China from 1990 to 2019

Note: Estimates are for populations aged 55 years and above, both sexes in China. Rates are reported per 100000 person-years.

Figure S2 Incident cases, deaths and DALYs (A, B, C) of 29 cancers in 4 age groups (55–64 years, 65–74 years, 75–84 years, 85+ years) and the proportional incident cases, deaths, DALYs (D, E, F) in the four age groups in China in 2019

Note: Estimates are for populations aged 55 years and above, both sexes in China. DALY = disability-adjusted life-year.

Figure S3 Incident cases, DALYs (A, B) and the proportional incident cases, DALYs (C, D) of 29 cancers among men and women in China in 2019

Note: Estimates are for populations aged 55 years and above among men and women in China. DALY=disability-adjusted life-year.

Figure S4 Ratio of men to women incidence rate (A) and ratio of men to women DALY rate (B) of 24 cancers (the cancers can affect both men and women) in China from 1990 to 2019

Note: Estimates are for populations aged 55 years and above. DALY=disability-adjusted life-year.

Figure S5 Incident cases (A), death cases (C), DALYs (E) and the proportional incident cases (B), proportional deaths (D), proportional DALYs (F) of 29 cancers among China, United States, Western Europe in 2019

Note: Estimates are for populations aged 55 years and above. DALY=disability-adjusted life-year.

Figure S6 The change trend of ASIR in 29 cancers among China, United States, Western Europe from 1990 to 2019

Note: Estimates are for populations aged 55 years and above. Rates are reported per 100000 person-years. ASIR=age-standardized incidence rate.

Figure S7 The change trend of ASDR in 29 cancers among China, United States, Western Europe from 1990 to 2019

Note: Estimates are for populations aged 55 years and above. Rates are reported per 100000 person-years. ASDR=age-standardized death rate.

Table S1 List of International Classification of Diseases (ICD) codes mapped to the Global Burden of Disease cause list for neoplasms

Cancer type	ICD10	ICD9
Lip and oral cavity cancer	C00-C07, C08-C08.9, Z85.81-Z85.810	140-145.9, V76.42
Nasopharynx cancer	C11-C11.9	147-147.9
Other pharynx cancer	C09-C10.9, C12-C13.9	146-146.9, 148-148.9
Esophageal cancer	C15-C15.9, Z85.01	150-150.9
Stomach cancer	C16-C16.9, Z12.0, Z85.02-Z85.028	151-151.9, 209.23, V10.04
Colon and rectum cancer	C18-C19.0, C20, C21-C21.8, Z12.1-Z12.13, Z85.03-Z85.048, Z86.010	153-154.9, 209.1-209.17, V10.05-V10.06, V76.41, V76.5-V76.52
Liver cancer	C22-C22.4, C22.7-C22.9, Z85.05	155-155.9, V10.07
Gallbladder and biliary tract cancer	C23, C24-C24.9	156-156.9
Pancreatic cancer	C25-C25.9, Z85.07	157-157.9
Larynx cancer	C32-C32.9, Z85.21	161-161.9, V10.21
Tracheal, bronchus, and lung cancer	C33, C34-C34.92, Z12.2, Z80.1-Z80.2, Z85.1-Z85.20	162-162.9, 209.21, V10.1-V10.20, V16.1-V16.2, V16.4-V16.40
Malignant skin melanoma	C43-C43.9, Z85.82-Z85.828	172-172.9
Non-melanoma skin cancer	C44.01-C44.99	173-173.99
Breast cancer	C50-C50.629, C50.8-C50.929, Z12.3-Z12.39, Z80.3, Z85.3, Z86.000	174-175.9, V10.3, V16.3
Cervical cancer	C53-C53.9, Z12.4, Z85.41	180-180.9, V10.41, V72.32
Uterine cancer	C54-C54.3, C54.8-C54.9, Z85.42, Z86.001	182-182.9
Ovarian cancer	C56-C56.2, C56.9, Z80.41, Z85.43	183-183.0, 183.8-183.9, V10.43, V16.41
Prostate cancer	C61-C61.9, Z12.5, Z80.42, Z85.46	185-185.9, V10.46, V16.42, V76.44
Testicular cancer	C62-C62.92, Z80.43, Z85.47-Z85.48	186-186.9, V10.47-V10.48, V16.43
Kidney cancer	C64-C64.2, C64.9-C65.9, Z80.51, Z85.52-Z85.54	189-189.1, 189.5-189.6, 209.24

Bladder cancer	C67-C67.9, Z12.6-Z12.79, Z80.52, Z85.51	188-188.9, V10.51, V16.52, V76.3
Brain and central nervous system cancer	C70-C70.1, C70.9-C72.9, Z85.841-Z85.848, Z86.011	191-191.9
Thyroid cancer	C73, Z85.850	193-193.9
Mesothelioma	C45-C45.2, C45.7, C45.9	/
Hodgkin lymphoma	C81-C81.49, C81.7-C81.79, C81.9-C81.99, Z85.71-Z85.72	201-201.98, V10.72
Non-Hodgkin lymphoma	C82-C85.29, C85.7-C86.6, C96-C96.9	200-200.9, 202-202.98
Multiple myeloma	C88-C90.32	203-203.9
Leukemia	C91-C93.7, C93.9-C95.2, C95.7-C95.92, Z80.6, Z85.6	204-208.92, V10.59-V10.69, V16.6
Other malignant neoplasms	C75.90-C75.92, D00-D24.9, D26.0-D39.9, D4-D49.9, E34.0, K51.4-K51.419, K62.0-K62.3, K63.5, N60-N60.99, N84.0- N84.1, N87-N87.9	209.4-209.57, 209.61, 209.63-209.67, 210.0-217.8, 219-237.6, 237.70-237.72, 237.9-239.9, 569.0, 610- 610.9, 622.1-622.2, 622.7

Note: ICD= International Classification of Diseases.

Table S2 The incident cases and ASIR of 29 cancers among China, United States and Western Europe in 1990 and 2019, and the AAPC of ASIR from 1990 to 2019

Cause	Incident cases*1000 in 1990 (95% UI)		
	China	United States	Western Europe
All malignant cancers	1086.7 (899.9-1275.9)	2018.9 (1740.8-2300.7)	1508.8 (1390.6-1613.5)
Bladder cancer	19.3 (16.9-22)	24.3 (23.1-25)	80.6 (77.8-82.8)
Brain and central nervous system cancer	15.6 (12.8-20.9)	9.5 (8.2-11.4)	17 (15-21.8)
Breast cancer	37.5 (31.5-44)	131.8 (125.6-135.9)	154.7 (147.4-159.5)
Cervical cancer	18.3 (14.6-29.9)	6.5 (5.9-6.8)	14.5 (13.3-15.3)
Colon and rectum cancer	72.5 (64.3-81.6)	135.7 (129.3-139.5)	204.7 (196.2-209.8)
Esophageal cancer	143.5 (92.4-166.6)	10.3 (9.9-10.6)	22.6 (21.9-23.1)
Gallbladder and biliary tract cancer	9.7 (8-16.1)	6.4 (5.3-6.8)	20.8 (16.4-22)
Hodgkin lymphoma	2.6 (1.4-3.4)	2.5 (2-2.7)	3.8 (3.1-4.2)
Kidney cancer	5 (4.3-5.8)	24.1 (23.2-24.9)	30.7 (29.5-31.6)
Larynx cancer	10.6 (9.1-12.2)	9.8 (9.5-10)	20.6 (20-21.2)
Leukemia	18.5 (15.7-22.3)	26 (24.5-26.9)	38.6 (36.7-39.8)
Lip and oral cavity cancer	7.5 (6.7-8.5)	16.7 (16.1-17.2)	24.1 (23.3-25)
Liver cancer	137.2 (115.9-165.4)	5.6 (5.4-5.7)	17.8 (17.2-18.3)
Malignant skin melanoma	1.7 (1.3-2.5)	19.5 (14.6-25.3)	19.2 (15.8-26.3)
Mesothelioma	0.7 (0.6-1)	2.5 (2.3-2.7)	7 (6.4-7.7)
Multiple myeloma	4.6 (3.8-6.4)	12.4 (10.5-12.9)	17.1 (15.7-19.4)
Nasopharynx cancer	15.1 (12.9-17.3)	1.1 (1.1-1.2)	3.1 (2.9-3.2)
Non-Hodgkin lymphoma	8.5 (7.3-9.7)	32.2 (29.8-34.6)	37.4 (34.7-40.2)
Non-melanoma skin cancer	23.7 (19.2-29.2)	1074.2 (895.2-1305.6)	200.2 (177.9-227)
Other malignant neoplasms	26.6 (22.9-30.5)	23.9 (22.2-25.7)	41.3 (35.8-43.5)
Other pharynx cancer	2.1 (1.8-2.4)	5.2 (5-5.4)	7.6 (7.4-7.9)
Ovarian cancer	5.2 (4-8.2)	15.1 (13.6-15.7)	27 (24.5-28)

Pancreatic cancer	20 (17.4-22.4)	26 (24.6-26.8)	44 (42.1-45.1)
Prostate cancer	24.9 (19-30)	175.3 (120-193.7)	136.8 (103.5-166.3)
Stomach cancer	241 (211.8-272)	23.6 (22.4-24.3)	83.7 (79.8-85.8)
Testicular cancer	0.4 (0.4-0.5)	0.7 (0.6-0.8)	1.5 (1.1-1.8)
Thyroid cancer	3.8 (3.2-4.9)	6.6 (6.3-6.9)	10.5 (9.8-11)
Tracheal, bronchus, and lung cancer	197.7 (170.7-224.7)	163.4 (157.8-166.9)	188.8 (183.7-191.9)
Uterine cancer	12.6 (9.9-15.4)	27.9 (26.7-28.8)	33.2 (31.8-34.4)
	Incident cases*1000 in 2019 (95% UI)		
Cause	China	United States	Western Europe
All malignant cancers	3458.9 (2840.8-4127.2)	5398.4 (4772.4-6138.4)	2585.2 (2181-3072.2)
Bladder cancer	81.5 (68-96.7)	45.7 (39.1-53.6)	128.9 (110.9-148.2)
Brain and central nervous system cancer	46.8 (34.8-56.5)	18.8 (13.5-22.5)	32.2 (19.6-39.9)
Breast cancer	208.5 (168.1-257.1)	193.5 (161.2-232)	248.6 (214.9-283.2)
Cervical cancer	48.2 (26.7-61.1)	9.7 (7.7-11.8)	15 (12.6-17.3)
Colon and rectum cancer	464.3 (399.9-538.6)	196.3 (170.6-225.6)	348.1 (302.3-393)
Esophageal cancer	242.5 (183.2-288.5)	20.8 (17.7-24.5)	36 (31.4-40.8)
Gallbladder and biliary tract cancer	33.2 (23.4-39.8)	8.8 (7.4-10.7)	22.1 (18.1-25.9)
Hodgkin lymphoma	4.4 (3.1-5.3)	4.1 (3.4-5.2)	6.1 (5.1-7.3)
Kidney cancer	35.2 (29.4-41.8)	50.6 (43.2-58.7)	63.5 (55.9-71.5)
Larynx cancer	37.1 (30.2-44.9)	14.4 (12-17.2)	20.9 (18-24.2)
Leukemia	62.6 (51.3-73.7)	45.4 (38.7-53)	88.9 (77-101.4)
Lip and oral cavity cancer	33.6 (28.1-39.9)	25.8 (22.2-30.1)	32.8 (28.3-37.7)
Liver cancer	139.8 (117.3-165)	24.1 (19.7-29)	41 (35.7-47.1)
Malignant skin melanoma	8.9 (5.6-11.3)	58.6 (40-74.3)	65.7 (39.2-78.4)
Mesothelioma	1.8 (1.5-2.2)	3.6 (3-4.2)	11.4 (9.9-12.8)
Multiple myeloma	14.7 (10.9-18.3)	25 (21.2-30.3)	36.2 (29.1-41.4)

Nasopharynx cancer	47.4 (38.8-57.2)	1.8 (1.5-2.1)	5.3 (4.5-6.1)
Non-Hodgkin lymphoma	61.6 (51.3-73.1)	54.2 (46.4-63)	78.7 (66.4-90.8)
Non-melanoma skin cancer	212.7 (178.8-251.9)	3813 (3455.5-4179.2)	332.7 (276.1-404)
Other malignant neoplasms	126 (101.7-150.4)	52.7 (44.7-61.2)	78.1 (64.8-90)
Other pharynx cancer	7.1 (5.9-8.5)	11.2 (9.3-13.4)	18.4 (15.7-21.5)
Ovarian cancer	25.9 (17.7-32.5)	21.1 (17.1-25.7)	32.9 (27.9-38.1)
Pancreatic cancer	94.6 (80.9-109.3)	53.9 (46.4-61.9)	86.3 (74.5-97.8)
Prostate cancer	145.5 (112.5-193.1)	293.6 (228.9-439.5)	314.7 (258.6-455)
Stomach cancer	496.4 (418-586)	28.1 (24.2-32.5)	78.2 (67.8-88)
Testicular cancer	3.9 (2.9-4.9)	1.5 (1.1-2)	2.3 (1.8-2.9)
Thyroid cancer	17.6 (14.6-21)	17.2 (14.6-19.9)	16.1 (14-18.4)
Tracheal, bronchus, and lung cancer	721.9 (608.6-847.3)	238 (206.9-274.7)	274.6 (240.9-310.3)
Uterine cancer	35.3 (27.4-51.3)	67.2 (55.4-80.7)	69.5 (60-79.2)
Cause	ASIR in 1990 (95% UI)		
	China	United States	Western Europe
All malignant cancers	802.9 (658.7-953.8)	3606.2 (2965.6-4261)	1490.6 (1342.9-1631.6)
Bladder cancer	16.2 (13.9-18.6)	43.1 (40.6-45)	78.8 (74.5-82.6)
Brain and central nervous system cancer	11 (8.8-15.1)	17.5 (14.7-21.1)	17.3 (14.8-22)
Breast cancer	26.2 (21.9-31)	242.8 (226.9-255.8)	155.9 (145.5-165)
Cervical cancer	13 (10.2-21.3)	12.3 (10.7-13.2)	14.8 (13.2-16.1)
Colon and rectum cancer	55.9 (49.2-63.5)	240.6 (227.2-250.2)	199.6 (188.5-208)
Esophageal cancer	106 (68.4-124.4)	18.8 (17.9-19.6)	22.6 (21.6-23.5)
Gallbladder and biliary tract cancer	7.8 (6.4-12.8)	11.2 (9.2-12.3)	20.1 (15.6-22)
Hodgkin lymphoma	1.9 (1-2.5)	4.6 (3.6-5.2)	3.8 (3-4.3)
Kidney cancer	3.7 (3.1-4.3)	44.4 (42.1-46.5)	30.6 (28.6-32.7)
Larynx cancer	7.7 (6.5-8.9)	18.3 (17.4-19.2)	21.2 (20-22.5)

Leukemia	13.3 (11.1-16.5)	46.3 (43-48.6)	38.2 (35.5-40.4)
Lip and oral cavity cancer	5.7 (4.9-6.5)	30.8 (29.1-32.4)	24.7 (22.9-26.5)
Liver cancer	96.9 (81-117.1)	10.1 (9.5-10.5)	17.6 (16.6-18.5)
Malignant skin melanoma	1.4 (1-2)	36.2 (26.3-46.6)	19.3 (15.4-26.9)
Mesothelioma	0.5 (0.4-0.8)	4.4 (4-4.8)	6.9 (6.1-7.8)
Multiple myeloma	3.3 (2.6-4.7)	22.1 (18.1-23.7)	16.8 (14.9-19.1)
Nasopharynx cancer	10.6 (8.9-12.5)	2.2 (2-2.3)	3.2 (2.9-3.6)
Non-Hodgkin lymphoma	6.3 (5.4-7.4)	57.1 (51.2-62.9)	36.7 (33-40.4)
Non-melanoma skin cancer	19.4 (15-25.1)	1903.2 (1463.7-2438)	197 (166.5-234.6)
Other malignant neoplasms	20 (17-23.7)	43.1 (39-47.1)	41.1 (34.6-44.7)
Other pharynx cancer	1.6 (1.3-1.8)	10 (9.4-10.6)	8 (7.5-8.5)
Ovarian cancer	3.8 (2.9-5.9)	27.6 (24.7-29.1)	27.1 (24.1-28.7)
Pancreatic cancer	14.9 (12.9-16.9)	46.2 (43.5-48.1)	43 (40.7-44.7)
Prostate cancer	20.8 (15.6-26.4)	309.3 (206.9-350)	131.4 (97.3-160.9)
Stomach cancer	178.7 (155.5-203.6)	41.5 (38.9-43.3)	81.2 (76.6-84.5)
Testicular cancer	0.3 (0.3-0.4)	1.4 (1.1-1.7)	1.6 (1.1-2.1)
Thyroid cancer	2.8 (2.3-3.6)	12.6 (11.6-13.6)	10.7 (9.7-11.8)
Tracheal, bronchus, and lung cancer	144.5 (124.4-165.4)	297 (285.4-305.3)	187.9 (181.6-193.1)
Uterine cancer	8.7 (6.6-11)	51.4 (47.9-54.3)	33.5 (31-36)
	ASIR in 2019 (95% UI)		
Cause	China	United States	Western Europe
All malignant cancers	1022.3 (825.1-1230.8)	5432.8 (4625.8-6376.3)	1631.2 (1328.8-1995.6)
Bladder cancer	24.9 (20.5-29.7)	45.7 (38-54.1)	78.4 (65.6-91.9)
Brain and central nervous system cancer	13.8 (10-16.9)	19.1 (13.5-23.5)	21.4 (13-27)
Breast cancer	59 (47.1-73)	197.9 (161.5-240.2)	163.7 (138.1-191.2)
Cervical cancer	13.7 (7.6-17.5)	10.1 (7.8-12.4)	10 (8.1-12)

Colon and rectum cancer	137.8 (116.8-160.5)	198 (167.7-230)	213.7 (182.2-245.4)
Esophageal cancer	72.5 (53.5-87.1)	21.2 (17.6-25.3)	23.1 (19.6-26.9)
Gallbladder and biliary tract cancer	10.3 (7.2-12.4)	8.8 (7.3-10.9)	12.9 (10.4-15.5)
Hodgkin lymphoma	1.3 (0.9-1.7)	4.1 (3.2-5.4)	3.9 (3.1-5)
Kidney cancer	10.3 (8.5-12.3)	51.7 (43.3-61)	40.9 (34.6-47.8)
Larynx cancer	10.7 (8.6-13)	14.8 (12.2-18)	14.4 (12.1-17.2)
Leukemia	18 (14.4-21.6)	45 (37.5-53.1)	54.4 (45.3-64)
Lip and oral cavity cancer	9.8 (8.1-11.8)	26.4 (22.1-31.1)	22.1 (18.4-25.9)
Liver cancer	40.7 (33.7-48.3)	24.8 (20-30.1)	26 (22-30.3)
Malignant skin melanoma	2.7 (1.6-3.5)	59.7 (40.3-78.2)	43 (25.6-52.9)
Mesothelioma	0.5 (0.4-0.7)	3.6 (3-4.3)	7.1 (6-8.3)
Multiple myeloma	4.3 (3.1-5.4)	25.2 (20.6-31.6)	22.1 (17.3-26.3)
Nasopharynx cancer	13.5 (10.7-16.8)	1.8 (1.5-2.2)	3.7 (2.9-4.5)
Non-Hodgkin lymphoma	18.1 (14.9-21.9)	53.8 (44.5-64)	46.8 (38.7-55.1)
Non-melanoma skin cancer	62.6 (49.1-78.1)	3824.3 (3320.4-4363.6)	203.9 (155-267.3)
Other malignant neoplasms	37.6 (29.7-45.2)	53 (44-62.3)	48 (39-56.8)
Other pharynx cancer	2.1 (1.7-2.5)	11.7 (9.5-14.1)	13.3 (10.9-16.1)
Ovarian cancer	7.4 (5-9.4)	21.5 (17-26.5)	21.2 (17.6-25.3)
Pancreatic cancer	28.3 (23.9-33)	54.2 (45.8-62.9)	52.4 (44.2-60.4)
Prostate cancer	43.7 (33.1-59.2)	298.5 (226.3-451.6)	200.4 (157.1-294.7)
Stomach cancer	147.2 (122.5-174.4)	28.1 (23.7-32.9)	46.8 (39.7-53.7)
Testicular cancer	1.1 (0.8-1.5)	1.7 (1.1-2.2)	1.7 (1.2-2.3)
Thyroid cancer	5.1 (4.1-6.1)	17.9 (14.9-21.1)	11.3 (9.5-13.2)
Tracheal, bronchus, and lung cancer	215.5 (179.9-253.2)	240.9 (205.4-279)	177.4 (152.2-203.2)
Uterine cancer	9.9 (7.5-14.2)	69.4 (56.2-84.6)	47.1 (39.4-55.3)
Cause		AAPC (95% CI)	

	China	United States	Western Europe
All malignant cancers	0.81 (0.65 to 0.98)	1.39 (1.3 to 1.48)	0.38 (0.3 to 0.47)
Bladder cancer	1.42 (1.19 to 1.66)	0.17 (-0.01 to 0.35)	-0.02 (-0.12 to 0.08)
Brain and central nervous system cancer	0.78 (0.59 to 0.97)	0.29 (0.16 to 0.42)	0.73 (0.57 to 0.89)
Breast cancer	2.72 (2.12 to 3.31)	-0.77 (-0.94 to -0.59)	0.16 (0.03 to 0.28)
Cervical cancer	0.16 (-0.23 to 0.54)	-0.71 (-0.99 to -0.44)	-1.28 (-1.45 to -1.1)
Colon and rectum cancer	3.13 (2.86 to 3.4)	-0.67 (-0.95 to -0.38)	0.19 (0.01 to 0.36)
Esophageal cancer	-1.34 (-1.56 to -1.12)	0.32 (0.26 to 0.38)	0.06 (0.01 to 0.12)
Gallbladder and biliary tract cancer	0.93 (0.78 to 1.08)	-0.87 (-1.06 to -0.68)	-1.52 (-1.62 to -1.41)
Hodgkin lymphoma	-1.24 (-1.53 to -0.94)	-0.33 (-0.51 to -0.16)	0.09 (-0.01 to 0.19)
Kidney cancer	3.55 (3.33 to 3.78)	0.45 (0.19 to 0.71)	1.01 (0.89 to 1.13)
Larynx cancer	1.13 (0.95 to 1.3)	-0.71 (-0.94 to -0.48)	-1.31 (-1.43 to -1.19)
Leukemia	1.02 (0.79 to 1.26)	-0.11 (-0.36 to 0.15)	1.23 (1.1 to 1.36)
Lip and oral cavity cancer	1.84 (1.68 to 2.01)	-0.48 (-0.6 to -0.36)	-0.39 (-0.54 to -0.23)
Liver cancer	-3 (-3.21 to -2.79)	3.14 (3.11 to 3.18)	1.36 (1.3 to 1.42)
Malignant skin melanoma	2.35 (2.1 to 2.61)	1.78 (1.53 to 2.03)	2.79 (2.61 to 2.96)
Mesothelioma	-0.01 (-0.22 to 0.2)	-0.7 (-0.86 to -0.55)	0.13 (0 to 0.26)
Multiple myeloma	0.85 (0.68 to 1.02)	0.45 (0.35 to 0.56)	0.96 (0.84 to 1.08)
Nasopharynx cancer	0.74 (0.52 to 0.97)	-0.63 (-0.76 to -0.5)	0.48 (0.38 to 0.58)
Non-Hodgkin lymphoma	3.67 (3.28 to 4.07)	-0.21 (-0.37 to -0.06)	0.87 (0.73 to 1.01)
Non-melanoma skin cancer	4.15 (3.92 to 4.38)	2.39 (2.26 to 2.52)	0.18 (0.09 to 0.26)
Other malignant neoplasms	2.17 (2.04 to 2.31)	0.74 (0.63 to 0.84)	0.54 (0.44 to 0.65)
Other pharynx cancer	0.97 (0.82 to 1.12)	0.64 (0.3 to 0.98)	1.78 (1.48 to 2.07)
Ovarian cancer	2.31 (2.09 to 2.53)	-0.85 (-1.1 to -0.59)	-0.96 (-1.04 to -0.88)
Pancreatic cancer	2.22 (1.95 to 2.49)	0.57 (0.28 to 0.86)	0.7 (0.56 to 0.84)
Prostate cancer	2.58 (2.35 to 2.8)	-0.11 (-0.22 to 0.01)	1.46 (1.34 to 1.59)

Stomach cancer	-0.69 (-0.9 to -0.48)	-1.34 (-1.6 to -1.08)	-1.9 (-2.06 to -1.73)
Testicular cancer	4.25 (3.78 to 4.73)	0.54 (0.37 to 0.71)	0.26 (0.01 to 0.5)
Thyroid cancer	2.04 (1.72 to 2.36)	1.23 (0.89 to 1.58)	0.15 (0.01 to 0.28)
Tracheal, bronchus, and lung cancer	1.33 (1.07 to 1.6)	-0.69 (-1.1 to -0.27)	-0.16 (-0.35 to 0.04)
Uterine cancer	0.38 (0.02 to 0.75)	0.97 (0.58 to 1.37)	1.17 (0.92 to 1.42)

Note: Estimates are for populations aged 55 years and above, both sexes combined. All malignant cancers are the sum of the following 29 cancers. Rates are reported per 100000 person-years. Cancer types are listed alphabetically. Other malignant neoplasms are cancers without a detailed GBD cause separately listed. UI=uncertainty interval. ASIR=age-standardized incidence rate. AAPC=average annual percentage change. CI = confidence interval. UI = uncertainty intervals.

Table S3 The death cases and ASDR of 29 cancers among China, United States and Western Europe in 1990 and 2019, and the AAPC of ASDR from 1990 to 2019

Cause	Deaths*100 in 1990 (95% UI)		
	China	United States	Western Europe
All malignant neoplasms	10255.9 (8495.6-12019.9)	4642.4 (4277.9-4849.5)	8532.2 (7949.3-8951.6)
Bladder cancer	148.2 (129.7-167)	116.3 (108.9-120.8)	355.2 (338.4-365.5)
Brain and central nervous system cancer	158.6 (129.5-212)	85.5 (73.7-103.1)	142.8 (127.3-185.7)
Breast cancer	236.3 (198.7-277.3)	375.5 (352.2-387.8)	710.6 (667.9-731.8)
Cervical cancer	163 (129.5-259.2)	39.8 (35.9-41.9)	98.4 (89.8-102.8)
Colon and rectum cancer	583 (514.6-653.1)	600.2 (563.5-620.7)	1212.7 (1148.3-1247.8)
Esophageal cancer	1494.3 (948.6-1736.8)	99.7 (95.9-102.7)	223.8 (215.7-228.7)
Gallbladder and biliary tract cancer	98.1 (80.9-161.9)	41.3 (33.9-43.7)	165.8 (130.3-174.6)
Hodgkin lymphoma	24.9 (13.2-32)	9.2 (7.5-10.2)	20.8 (16.9-23.1)
Kidney cancer	37.1 (32.1-42.6)	98.3 (93.7-101.8)	177.1 (169.3-182.4)
Larynx cancer	90.4 (77.5-103.3)	36.5 (35.2-37.4)	109.6 (106.4-112.3)
Leukemia	170.4 (146.2-204.4)	169.8 (159.7-175.7)	250.4 (237.4-257.3)
Lip and oral cavity cancer	51.5 (45.1-57.8)	50.7 (48.3-52.1)	97.3 (93.3-99.7)
Liver cancer	1417.3 (1212.5-1698.7)	55.3 (52.7-56.8)	180.9 (173.6-186)
Malignant skin melanoma	15.4 (11.2-23.1)	49 (36.8-64.3)	65.4 (54.7-91.7)
Mesothelioma	7.1 (5.5-10)	20.7 (19.3-22.2)	58.2 (53-64.4)
Multiple myeloma	42.2 (34.5-58.4)	94.8 (80.2-98.8)	126.7 (116.9-144.1)
Nasopharynx cancer	146.9 (126.6-168.6)	7.1 (6.8-7.3)	17.1 (16.5-17.7)
Non-Hodgkin lymphoma	88.6 (77.6-100)	181.2 (171.2-186.6)	214.3 (204.7-220.4)
Non-melanoma skin cancer	39.3 (34.4-44.1)	20.4 (18.9-21.1)	33.3 (30.1-34.7)
Other malignant neoplasms	234.8 (204.2-271.2)	97.2 (88.6-105.4)	254 (225.5-265.3)
Other pharynx cancer	20.5 (17.7-23.4)	16.5 (15.9-17.1)	48.5 (47-50.1)
Ovarian cancer	46.9 (35.8-73.6)	122.9 (109.9-128.3)	224.9 (204-233.5)

Pancreatic cancer	209.1 (183.3-236.3)	261.5 (246.6-269.7)	452 (430.6-463.2)
Prostate cancer	196.3 (152.8-238.5)	358.2 (253.8-401.3)	621.4 (475.3-743.6)
Stomach cancer	2410.9 (2111.8-2722.1)	170.3 (160.4-175.4)	738.3 (702.7-757.6)
Testicular cancer	2.2 (1.8-2.6)	1 (1-1.1)	3.3 (3.1-3.4)
Thyroid cancer	22.9 (19.8-30.1)	11 (10.1-11.4)	35.2 (32.6-36.5)
Tracheal, bronchus, and lung cancer	2028.8 (1764.5-2324.3)	1400 (1348.2-1429.9)	1808.5 (1757.8-1838.7)
Uterine cancer	70.9 (56-87.3)	52.6 (49.1-54.5)	85.5 (80.1-88.8)
	Deaths*100 in 2019 (95% UI)		
Cause	China	United States	Western Europe
All malignant neoplasms	22435.1 (18497.8-26498.8)	6967.4 (6336.1-7569)	11762.7 (10400.9-12815.6)
Bladder cancer	369.8 (313.9-433.7)	220.8 (200.2-236)	493.5 (440.3-532.4)
Brain and central nervous system cancer	416.4 (306.6-504.7)	159.9 (116.7-174)	239.4 (144.3-272.8)
Breast cancer	678 (549.5-824.5)	467.3 (428.5-494.7)	857 (757.9-914)
Cervical cancer	350.1 (205.4-446.1)	58.3 (48.4-62.3)	94.3 (80.8-102.7)
Colon and rectum cancer	2174.3 (1868.1-2512.2)	761.2 (701.4-795.4)	1636.4 (1468-1729.6)
Esophageal cancer	2296.9 (1770.8-2749.5)	197.5 (186.8-206.1)	320 (296.7-337)
Gallbladder and biliary tract cancer	302.8 (220.7-361.3)	49.9 (44.7-60.2)	163 (135.1-182)
Hodgkin lymphoma	18.9 (13.6-22.9)	10.9 (9.5-13.4)	18.3 (15.3-21.8)
Kidney cancer	186.5 (155-219.8)	180.4 (167.1-190.2)	320.3 (291.5-339.5)
Larynx cancer	175.2 (145.8-209)	45.2 (42.8-47.2)	87.6 (81.5-92.2)
Leukemia	340 (281.6-400.8)	279.4 (255.5-294.8)	409.7 (359.5-436.1)
Lip and oral cavity cancer	183.3 (154.2-218.8)	70.2 (65.8-73.2)	125.9 (115.6-132.2)
Liver cancer	1327.2 (1123.9-1565.1)	214.5 (190.5-235.1)	374.7 (345.3-399.4)
Malignant skin melanoma	36.1 (23.3-45.2)	100.1 (67.6-119.8)	132.6 (77.7-148.8)
Mesothelioma	19.1 (15.8-22.8)	30.8 (28.4-33)	98.4 (90.1-104)
Multiple myeloma	110.7 (84.4-135.3)	170.2 (152.6-194)	249.5 (202.7-268.4)

Nasopharynx cancer	191.1 (159.4-225.9)	8.8 (8.3-9.2)	15.6 (14.5-16.6)
Non-Hodgkin lymphoma	325.2 (276.2-379.5)	276.4 (254.2-291.9)	353.2 (316.2-376.8)
Non-melanoma skin cancer	136.9 (115.7-157.1)	42 (36.5-44.7)	63.2 (53.3-68)
Other malignant neoplasms	542.9 (434-639.8)	170.6 (149.5-183.5)	350.9 (293.3-380.8)
Other pharynx cancer	44.3 (35.9-53.1)	27 (25.6-28.4)	78.3 (72.4-84)
Ovarian cancer	212.5 (147.4-268.1)	174.8 (156.9-189.5)	276.2 (240.1-301.1)
Pancreatic cancer	990.2 (846.4-1146.4)	536.9 (499.8-563.7)	865.6 (780.7-923.6)
Prostate cancer	532.2 (420.5-696.7)	477.8 (408.1-697.8)	951.3 (787.2-1320.8)
Stomach cancer	3628 (3052.9-4225.4)	172.4 (158.9-180.6)	589.7 (529.4-626)
Testicular cancer	6.6 (5.2-8)	1.9 (1.7-2)	4 (3.6-4.4)
Thyroid cancer	59.1 (48.7-69)	22.5 (20.2-23.6)	39.8 (34.6-42.8)
Tracheal, bronchus, and lung cancer	6688.9 (5651.6-7824.3)	1944 (1821.1-2023.8)	2422.3 (2257.5-2517.3)
Uterine cancer	91.6 (71.3-133.6)	95.9 (88.9-101)	131.7 (115.8-140.4)
Cause	ASDR in 1990 (95% UI)		
	China	United States	Western Europe
All malignant neoplasms	790 (648-934.1)	826 (754.3-870.7)	836.7 (768.5-891.4)
Bladder cancer	13.9 (11.9-15.8)	20.1 (18.6-21.1)	34.2 (32.1-35.8)
Brain and central nervous system cancer	11.6 (9.2-15.7)	15.7 (13.1-19)	14.5 (12.4-18.7)
Breast cancer	17.9 (14.9-21.2)	68 (63.3-70.9)	71.2 (66.3-74.5)
Cervical cancer	12.2 (9.7-19.3)	7.3 (6.3-7.8)	9.8 (8.7-10.7)
Colon and rectum cancer	48.6 (42.5-55.2)	105.3 (98.3-109.7)	118.1 (110.6-123)
Esophageal cancer	114.3 (73.3-134.4)	18.1 (17.2-18.9)	22.3 (21.2-23.2)
Gallbladder and biliary tract cancer	8.3 (6.7-13.4)	7.2 (5.9-7.9)	16 (12.4-17.4)
Hodgkin lymphoma	1.8 (1-2.4)	1.7 (1.3-1.9)	2 (1.6-2.3)
Kidney cancer	3 (2.5-3.4)	17.7 (16.6-18.5)	17.4 (16.3-18.5)
Larynx cancer	6.9 (5.8-7.9)	6.7 (6.3-7)	11 (10.5-11.6)

Leukemia	12.8 (10.6-15.7)	29.8 (27.8-31.2)	24.4 (22.9-25.5)
Lip and oral cavity cancer	4.2 (3.6-4.8)	9.2 (8.7-9.6)	9.9 (9.3-10.4)
Liver cancer	103.1 (86.7-124)	9.9 (9.3-10.3)	17.7 (16.7-18.6)
Malignant skin melanoma	1.3 (0.9-1.9)	8.9 (6.5-11.6)	6.5 (5.2-9.3)
Mesothelioma	0.6 (0.4-0.8)	3.6 (3.3-4)	5.7 (5-6.4)
Multiple myeloma	3.1 (2.5-4.4)	16.7 (13.7-17.6)	12.3 (11-14)
Nasopharynx cancer	10.7 (9-12.7)	1.3 (1.3-1.4)	1.8 (1.6-1.9)
Non-Hodgkin lymphoma	6.9 (6-7.9)	32 (30.1-33.2)	20.9 (19.8-21.8)
Non-melanoma skin cancer	3.5 (3-4.1)	3.6 (3.3-3.8)	3.4 (3-3.6)
Other malignant neoplasms	18.6 (15.9-22)	17.3 (15.3-19.1)	25.1 (21.4-26.7)
Other pharynx cancer	1.6 (1.3-1.8)	3.1 (2.9-3.3)	5 (4.7-5.4)
Ovarian cancer	3.5 (2.7-5.6)	22 (19.5-23.3)	22.3 (19.8-23.6)
Pancreatic cancer	16.2 (14-18.5)	46.2 (43.3-48.1)	44.1 (41.5-45.9)
Prostate cancer	18.2 (13.7-23.4)	61 (41.7-69.1)	58.7 (43.6-71.9)
Stomach cancer	186.2 (161.9-211.5)	29.8 (27.9-31)	71.6 (67.3-74.4)
Testicular cancer	0.2 (0.1-0.2)	0.2 (0.2-0.2)	0.3 (0.3-0.4)
Thyroid cancer	1.9 (1.6-2.6)	1.9 (1.8-2.1)	3.4 (3.1-3.6)
Tracheal, bronchus, and lung cancer	153.5 (132.2-176.7)	252.6 (242.3-259.3)	178.7 (172.5-183.5)
Uterine cancer	5.3 (4.1-6.7)	9.2 (8.4-9.8)	8.4 (7.7-9)
		ASDR in 2019 (95% UI)	
Cause	China	United States	Western Europe
All malignant neoplasms	688.8 (561.2-817.5)	692.4 (621.9-766.4)	696.2 (611.2-775.4)
Bladder cancer	12.3 (10.4-14.5)	21.3 (19.1-23.2)	27 (23.9-29.8)
Brain and central nervous system cancer	12.4 (8.8-15.2)	16.3 (11.8-18.4)	15.8 (9.5-18.4)
Breast cancer	20.5 (16.5-25)	46.2 (41.6-49.8)	50.6 (44.6-55.3)
Cervical cancer	10.4 (6.2-13.2)	5.9 (4.8-6.5)	5.7 (4.9-6.5)

Colon and rectum cancer	68.8 (58.5-79.5)	74.7 (68.2-79.3)	92.8 (83.3-99.7)
Esophageal cancer	70.3 (52.5-84.2)	19.9 (18.4-21.3)	20 (18.1-21.7)
Gallbladder and biliary tract cancer	9.6 (6.9-11.5)	4.9 (4.3-6.1)	9.3 (7.7-10.9)
Hodgkin lymphoma	0.6 (0.4-0.7)	1.1 (0.9-1.4)	1.1 (0.9-1.4)
Kidney cancer	5.8 (4.8-6.9)	18 (16.2-19.6)	19 (16.8-21)
Larynx cancer	5.3 (4.3-6.3)	4.6 (4.2-4.9)	5.6 (5.1-6.1)
Leukemia	10.2 (8.3-12.3)	27.4 (24.8-29.5)	23.3 (20.3-25.4)
Lip and oral cavity cancer	5.6 (4.7-6.7)	7 (6.4-7.5)	7.9 (7.2-8.6)
Liver cancer	39.4 (33.1-46.4)	21.8 (18.9-24.4)	23 (20.6-25.1)
Malignant skin melanoma	1.2 (0.7-1.5)	10 (6.8-12.5)	8 (4.7-9.4)
Mesothelioma	0.6 (0.5-0.7)	3.1 (2.8-3.4)	6 (5.4-6.5)
Multiple myeloma	3.3 (2.4-4.1)	16.9 (14.8-20.2)	14.5 (11.6-16.3)
Nasopharynx cancer	5.6 (4.6-6.7)	0.9 (0.8-1)	1 (0.9-1.2)
Non-Hodgkin lymphoma	9.7 (8.2-11.5)	27.2 (24.8-29.1)	20.4 (18.3-22.1)
Non-melanoma skin cancer	4.6 (3.8-5.4)	4 (3.5-4.4)	3.3 (2.8-3.6)
Other malignant neoplasms	16.8 (13.3-19.9)	16.9 (14.5-18.7)	20.5 (17-22.8)
Other pharynx cancer	1.3 (1.1-1.6)	2.8 (2.5-3)	5.5 (4.7-6.3)
Ovarian cancer	6.2 (4.3-7.9)	17.5 (15.5-19.6)	16.9 (14.6-19)
Pancreatic cancer	30.2 (25.5-35.1)	53.6 (49.1-57.3)	51.7 (46.3-56.4)
Prostate cancer	17.7 (13.6-23.3)	46 (38.8-69)	50.9 (41.8-72.7)
Stomach cancer	111.6 (93.2-130.8)	17 (15.5-18.1)	33.8 (30.2-36.5)
Testicular cancer	0.2 (0.2-0.3)	0.2 (0.2-0.2)	0.2 (0.2-0.3)
Thyroid cancer	1.9 (1.5-2.3)	2.2 (2-2.4)	2.3 (2-2.6)
Tracheal, bronchus, and lung cancer	204.1 (170.8-240)	195.2 (181.9-205.7)	152.3 (140.9-161.4)
Uterine cancer	2.7 (2.1-4.1)	9.6 (8.6-10.4)	7.8 (6.8-8.6)
Cause		AAPC (95% CI)	

	China	United States	Western Europe
All malignant neoplasms	-0.5 (-0.65 to -0.35)	-0.62 (-0.77 to -0.46)	-0.64 (-0.7 to -0.59)
Bladder cancer	-0.45 (-0.67 to -0.22)	0.2 (0.18 to 0.22)	-0.84 (-0.9 to -0.79)
Brain and central nervous system cancer	0.23 (0.04 to 0.42)	0.12 (0.01 to 0.22)	0.29 (0.22 to 0.37)
Breast cancer	0.38 (0.17 to 0.6)	-1.37 (-1.46 to -1.27)	-1.17 (-1.28 to -1.07)
Cervical cancer	-0.6 (-0.96 to -0.24)	-0.74 (-0.92 to -0.55)	-1.83 (-1.96 to -1.71)
Colon and rectum cancer	1.18 (0.91 to 1.44)	-1.21 (-1.37 to -1.04)	-0.85 (-0.99 to -0.71)
Esophageal cancer	-1.73 (-1.86 to -1.59)	0.33 (0.23 to 0.42)	-0.38 (-0.44 to -0.32)
Gallbladder and biliary tract cancer	0.49 (0.34 to 0.63)	-1.31 (-1.38 to -1.23)	-1.86 (-1.96 to -1.76)
Hodgkin lymphoma	-4.05 (-4.27 to -3.83)	-1.4 (-1.52 to -1.27)	-2.06 (-2.16 to -1.96)
Kidney cancer	2.3 (2.06 to 2.54)	0.08 (-0.05 to 0.22)	0.28 (0.2 to 0.36)
Larynx cancer	-0.92 (-1.1 to -0.74)	-1.29 (-1.43 to -1.14)	-2.36 (-2.43 to -2.29)
Leukemia	-0.77 (-0.93 to -0.62)	-0.29 (-0.42 to -0.15)	-0.16 (-0.27 to -0.05)
Lip and oral cavity cancer	0.94 (0.79 to 1.1)	-0.93 (-1.1 to -0.75)	-0.77 (-0.89 to -0.65)
Liver cancer	-3.24 (-3.59 to -2.9)	2.77 (2.62 to 2.92)	0.89 (0.79 to 0.99)
Malignant skin melanoma	-0.36 (-0.46 to -0.25)	0.42 (0.25 to 0.58)	0.72 (0.6 to 0.84)
Mesothelioma	0.03 (-0.17 to 0.22)	-0.55 (-0.66 to -0.43)	0.17 (0.07 to 0.27)
Multiple myeloma	0.13 (0.01 to 0.25)	0.05 (-0.02 to 0.12)	0.57 (0.5 to 0.65)
Nasopharynx cancer	-2.27 (-2.48 to -2.07)	-1.34 (-1.48 to -1.2)	-1.82 (-1.94 to -1.7)
Non-Hodgkin lymphoma	1.15 (0.88 to 1.42)	-0.56 (-0.74 to -0.38)	-0.09 (-0.18 to 0)
Non-melanoma skin cancer	0.87 (0.69 to 1.05)	0.34 (0.18 to 0.5)	-0.11 (-0.2 to -0.02)
Other malignant neoplasms	-0.38 (-0.52 to -0.24)	-0.07 (-0.13 to -0.01)	-0.69 (-0.81 to -0.58)
Other pharynx cancer	-0.61 (-0.78 to -0.45)	-0.36 (-0.55 to -0.17)	0.28 (0.14 to 0.42)
Ovarian cancer	1.92 (1.73 to 2.12)	-0.77 (-0.95 to -0.59)	-0.96 (-1.11 to -0.8)
Pancreatic cancer	2.14 (1.86 to 2.43)	0.53 (0.31 to 0.75)	0.53 (0.4 to 0.66)
Prostate cancer	-0.12 (-0.26 to 0.02)	-0.96 (-1.05 to -0.88)	-0.5 (-0.55 to -0.44)

Stomach cancer	-1.79 (-1.96 to -1.62)	-1.91 (-2.1 to -1.72)	-2.57 (-2.72 to -2.43)
Testicular cancer	0.58 (0.21 to 0.95)	0.03 (-0.08 to 0.13)	-1.03 (-1.14 to -0.92)
Thyroid cancer	-0.1 (-0.31 to 0.11)	0.48 (0.31 to 0.65)	-1.33 (-1.5 to -1.15)
Tracheal, bronchus, and lung cancer	0.94 (0.69 to 1.19)	-0.87 (-1.05 to -0.69)	-0.54 (-0.68 to -0.41)
Uterine cancer	-2.26 (-2.62 to -1.89)	0.11 (-0.02 to 0.23)	-0.24 (-0.3 to -0.18)

Note: Estimates are for populations aged 55 years and above, both sexes combined. All malignant cancers are the sum of the following 29 cancers. Rates are reported per 100000 person-years. Cancer types are listed alphabetically. Other malignant neoplasms are cancers without a detailed GBD cause separately listed. UI=uncertainty interval. ASDR=age-standardized death rate. AAPC=average annual percentage change. CI = confidence interval. UI = uncertainty intervals.

Table S4 The DALYs and DALY rate of 29 cancers among men and women over 55+ years old in China in 1990 and 2019, and percentage change in DALYs, annual rate of change in DALY rate from 1990 to 2019.

Cause	DALYs*1000 in 1990 (95% UI)		DALYs*1000 in 2019 (95% UI)		Percentage change in DALYs (95% UI)	
	Men	Women	Men	Women	Men	Women
Bladder cancer	202.2 (169.2-235.5)	86.9 (71.9-104)	534.3 (435.2-648.3)	136.7 (110.3-166.9)	164.2 (103.6 to 241.7)	57.3 (17.3 to 110)
Brain and central nervous system cancer	210.8 (147.5-307.5)	169.5 (126.5-227.1)	504.5 (308.6-674.7)	404.8 (287.5-526.4)	139.3 (45.6 to 255.9)	138.8 (39.4 to 250.4)
Breast cancer	6.6 (5.2-8)	586.4 (494.9-688.1)	54.3 (41.8-67.9)	1575 (1294.3-1904.2)	727.9 (490.4 to 1035.6)	168.6 (108.5 to 250)
Cervical cancer	0 (0-0)	384.6 (303.3-616.5)	0 (0-0)	804.4 (461.3-1026.7)	0 (0 to 0)	109.2 (-9.7 to 201.8)
Colon and rectum cancer	678.7 (562.8-799.5)	593.1 (500.1-695.5)	2775.6 (2249.7-3401.8)	1610.9 (1325.3-1942.6)	309 (211.4 to 431.7)	171.6 (112.3 to 250.3)
Esophageal cancer	2214.1 (1386.6-2699.4)	1139.8 (611.6-1358.2)	3615.2 (2757.4-4512.1)	1018.3 (708.7-1279.9)	63.3 (22.4 to 134.6)	-10.7 (-31.7 to 30)
Gallbladder and biliary tract cancer	91.6 (71.9-161.9)	115.4 (88.6-203.5)	301.1 (215.2-382.2)	285.7 (176.8-364.5)	228.8 (57.8 to 386.3)	147.6 (2.1 to 268.3)
Hodgkin lymphoma	35.8 (17.3-48)	22.1 (10-30.3)	27.7 (18.7-36.9)	14.5 (9.4-18.7)	-22.5 (-47.9 to 49.2)	-34.4 (-53.4 to 16)
Kidney cancer	47.7	36.1	269.9	116.7	465.8	223

	(38.7-59.1)	(30.3-42.2)	(210.2-336.3)	(94.4-141.9)	(298.8 to 698.5)	(151.2 to 318.5)
Larynx cancer	163.4	46.1	319.7	60.9	95.7	32
	(133.1-192.5)	(38.9-53.6)	(257.7-392.3)	(49.5-73.5)	(47.6 to 164.2)	(3.6 to 69.2)
Leukemia	215.9	189.9	432	327.4	100	72.4
	(170-278.4)	(154.7-233.4)	(318.3-548.6)	(248.5-407.5)	(41.9 to 179.2)	(17.1 to 133.4)
Lip and oral cavity cancer	73.2	42.7	305.3	81.9	317.4	92
	(59.4-87.2)	(35.5-50.7)	(243.5-382.8)	(66.5-99)	(202.8 to 472.7)	(46.8 to 150.6)
Liver cancer	2310.6	1085.6	2096.7	818.4	-9.3	-24.6
	(1842.6-2844.9)	(878.5-1342)	(1644.7-2604.8)	(653.5-1000.2)	(-34 to 26.3)	(-46.2 to 3.7)
Malignant skin melanoma	17	17.6	35.2	40.2	106.6	129
	(10.6-24.6)	(11.3-29.2)	(20.7-49.7)	(21.1-54.7)	(36.2 to 192.4)	(7.6 to 253)
Mesothelioma	6.6	9.6	22.8	18.3	244.2	91.7
	(5.1-9.9)	(6.5-15.4)	(17.6-29.5)	(11.8-23.7)	(109.7 to 387.9)	(-1.1 to 219)
Multiple myeloma	46.8	51.1	138.7	103.9	196.2	103.4
	(35-70.7)	(38.1-74.2)	(90.3-184.4)	(75.1-135.1)	(55.7 to 330.5)	(9.5 to 179.5)
Nasopharynx cancer	235.8	124.5	337.5	118.5	43.2	-4.8
	(191.4-283.9)	(99.8-150.3)	(266.8-417.6)	(94.1-144.9)	(5.9 to 95)	(-28.8 to 29.3)
Non-Hodgkin lymphoma	118.3	84.5	480.6	247.8	306.3	193.3
	(95.9-143.2)	(70.7-98.7)	(382.4-595.8)	(201.6-301.2)	(199.4 to 455.2)	(129.5 to 275.6)
Non-melanoma skin cancer	44.3	35.2	131	113.7	195.6	223.2
	(36.7-51.8)	(29.3-41.9)	(106.3-159.6)	(86.8-140.7)	(125.5 to 289.4)	(129.2 to 329.7)
Other malignant neoplasms	284.5	242.8	682.5	458.2	139.9	88.7
	(224.7-346.3)	(198.3-293.4)	(506.1-855.1)	(360.5-566.4)	(67 to 232.7)	(36.7 to 151.6)
Other pharynx cancer	34.7	12.2	80	16.8	130.8	37.4
	(28.7-40.8)	(10-14.4)	(62.2-99.6)	(13.5-20.4)	(67 to 212.7)	(2.5 to 82.6)

Ovarian cancer	0 (0-0)	113 (85.9-176.7)	0 (0-0)	490.1 (338.3-620)	0 (0 to 0)	333.8 (121.9 to 546.1)
Pancreatic cancer	276.2 (224-335.7)	198.4 (165.8-231.5)	1208.5 (954-1498.9)	819.9 (665.1-998.7)	337.6 (215.7 to 514.9)	313.3 (216.5 to 437.9)
Prostate cancer	369.4 (282.8-445.2)	0 (0-0)	948.9 (753.9-1248)	0 (0-0)	156.9 (96.6 to 247.4)	0 (0 to 0)
Stomach cancer	3579.7 (2931.5-4239.2)	1824.6 (1528.7-2128.4)	5293.6 (4203.2-6488.4)	2010.4 (1635.5-2468.6)	47.9 (11.2 to 96.7)	10.2 (-14.3 to 44.2)
Testicular cancer	4.7 (3.9-5.7)	0 (0-0)	14.2 (11.4-17.2)	0 (0-0)	200.7 (124.6 to 301.5)	0 (0 to 0)
Thyroid cancer	18.4 (14.9-23.2)	31.5 (25.8-42.9)	64.8 (49.7-80.1)	53.1 (43-65.1)	251.5 (140.7 to 380.1)	68.3 (23.9 to 123)
Tracheal, bronchus, and lung cancer	3268.7 (2671.2-3927.8)	1351 (1122-1585.3)	9479.7 (7467.5-11725.2)	3964.8 (3220.9-4834.6)	190 (109.4 to 292.8)	193.5 (126.4 to 282.5)
Uterine cancer	0 (0-0)	169.8 (132-209.5)	0 (0-0)	217.2 (172.2-314)	0 (0 to 0)	27.9 (-3.5 to 82.6)
Cause	DALY rate in 1990 (95% UI)		DALY rate in 2019 (95% UI)		Annual rate of change in DALY rate (95% UI)	
	Men	Women	Men	Women	Men	Women
Bladder cancer	168.1 (140.6-195.7)	63.8 (52.9-76.4)	169.3 (137.8-205.4)	38.8 (31.3-47.3)	0.01 (-0.22 to 0.3)	-0.39 (-0.55 to -0.19)
Brain and central nervous system cancer	175.2 (122.6-255.5)	124.6 (93-166.9)	159.8 (97.8-213.7)	114.8 (81.5-149.3)	-0.09 (-0.45 to 0.36)	-0.08 (-0.46 to 0.35)
Breast cancer	5.5	430.9	17.2	446.7	2.16	0.04

	(4.4-6.7)	(363.7-505.7)	(13.3-21.5)	(367-540)	(1.25 to 3.33)	(-0.2 to 0.35)
Cervical cancer	0	282.6	0	228.1	0	-0.19
	(0-0)	(222.9-453.1)	(0-0)	(130.8-291.2)	(0 to 0)	(-0.65 to 0.16)
Colon and rectum cancer	564.1	435.9	879.2	456.8	0.56	0.05
	(467.8-664.5)	(367.6-511.2)	(712.6-1077.6)	(375.8-550.9)	(0.19 to 1.03)	(-0.18 to 0.35)
Esophageal cancer	1840.2	837.7	1145.2	288.8	-0.38	-0.66
	(1152.4-2243.6)	(449.5-998.2)	(873.4-1429.3)	(201-363)	(-0.53 to -0.11)	(-0.74 to -0.5)
Gallbladder and biliary tract cancer	76.1	84.8	95.4	81	0.25	-0.04
	(59.7-134.6)	(65.1-149.6)	(68.2-121.1)	(50.1-103.4)	(-0.4 to 0.85)	(-0.61 to 0.42)
Hodgkin lymphoma	29.7	16.2	8.8	4.1	-0.7	-0.75
	(14.4-39.9)	(7.3-22.2)	(5.9-11.7)	(2.7-5.3)	(-0.8 to -0.43)	(-0.82 to -0.55)
Kidney cancer	39.7	26.5	85.5	33.1	1.16	0.25
	(32.1-49.1)	(22.3-31)	(66.6-106.5)	(26.8-40.2)	(0.52 to 2.04)	(-0.03 to 0.61)
Larynx cancer	135.8	33.9	101.3	17.3	-0.25	-0.49
	(110.6-160)	(28.6-39.4)	(81.6-124.3)	(14-20.8)	(-0.44 to 0.01)	(-0.6 to -0.35)
Leukemia	179.5	139.6	136.8	92.8	-0.24	-0.33
	(141.3-231.4)	(113.7-171.5)	(100.8-173.8)	(70.5-115.6)	(-0.46 to 0.06)	(-0.55 to -0.1)
Lip and oral cavity cancer	60.8	31.4	96.7	23.2	0.59	-0.26
	(49.4-72.5)	(26.1-37.3)	(77.1-121.3)	(18.9-28.1)	(0.15 to 1.18)	(-0.43 to -0.03)
Liver cancer	1920.4	797.9	664.2	232.1	-0.65	-0.71
	(1531.5-2364.5)	(645.6-986.2)	(521-825.1)	(185.3-283.6)	(-0.75 to -0.52)	(-0.79 to -0.6)
Malignant skin melanoma	14.2	12.9	11.1	11.4	-0.21	-0.12
	(8.8-20.5)	(8.3-21.5)	(6.5-15.7)	(6-15.5)	(-0.48 to 0.11)	(-0.58 to 0.36)
Mesothelioma	5.5	7	7.2	5.2	0.31	-0.26

	(4.2-8.2)	(4.8-11.3)	(5.6-9.3)	(3.3-6.7)	(-0.2 to 0.86)	(-0.62 to 0.23)
Multiple myeloma	38.9	37.5	43.9	29.5	0.13	-0.22
	(29.1-58.7)	(28-54.5)	(28.6-58.4)	(21.3-38.3)	(-0.41 to 0.64)	(-0.58 to 0.08)
Nasopharynx cancer	195.9	91.5	106.9	33.6	-0.45	-0.63
	(159.1-236)	(73.4-110.4)	(84.5-132.3)	(26.7-41.1)	(-0.6 to -0.26)	(-0.73 to -0.5)
Non-Hodgkin lymphoma	98.3	62.1	152.2	70.3	0.55	0.13
	(79.7-119)	(52-72.5)	(121.1-188.7)	(57.2-85.4)	(0.14 to 1.12)	(-0.11 to 0.45)
Non-melanoma skin cancer	36.8	25.9	41.5	32.3	0.13	0.25
	(30.5-43.1)	(21.5-30.8)	(33.7-50.5)	(24.6-39.9)	(-0.14 to 0.48)	(-0.12 to 0.66)
Other malignant neoplasms	236.5	178.5	216.2	129.9	-0.09	-0.27
	(186.8-287.8)	(145.8-215.6)	(160.3-270.9)	(102.2-160.6)	(-0.36 to 0.27)	(-0.47 to -0.03)
Other pharynx cancer	28.8	9	25.3	4.8	-0.12	-0.47
	(23.9-33.9)	(7.3-10.6)	(19.7-31.6)	(3.8-5.8)	(-0.36 to 0.19)	(-0.6 to -0.3)
Ovarian cancer	0	83	0	139	0	0.67
	(0-0)	(63.1-129.9)	(0-0)	(95.9-175.8)	(0 to 0)	(-0.14 to 1.49)
Pancreatic cancer	229.5	145.8	382.8	232.5	0.67	0.59
	(186.2-279)	(121.9-170.2)	(302.2-474.8)	(188.6-283.2)	(0.2 to 1.34)	(0.22 to 1.08)
Prostate cancer	307	0	300.6	0	-0.02	0
	(235-370.1)	(0-0)	(238.8-395.3)	(0-0)	(-0.25 to 0.32)	(0 to 0)
Stomach cancer	2975.2	1341	1676.8	570.1	-0.44	-0.57
	(2436.5-3523.3)	(1123.5-1564.2)	(1331.4-2055.3)	(463.8-700.1)	(-0.58 to -0.25)	(-0.67 to -0.44)
Testicular cancer	3.9	0	4.5	0	0.15	0
	(3.2-4.7)	(0-0)	(3.6-5.5)	(0-0)	(-0.14 to 0.53)	(0 to 0)
Thyroid cancer	15.3	23.2	20.5	15.1	0.34	-0.35
	(12.4-19.3)	(18.9-31.5)	(15.7-25.4)	(12.2-18.5)	(-0.08 to 0.83)	(-0.52 to -0.14)

Tracheal, bronchus, and lung cancer	2716.8 (2220.1-3264.5)	992.9 (824.6-1165.1)	3002.8 (2365.4-3714.1)	1124.4 (913.4-1371)	0.11 (-0.2 to 0.5)	0.13 (-0.13 to 0.48)
Uterine cancer	0 (0-0)	124.8 (97-154)	0 (0-0)	61.6 (48.8-89)	0 (0 to 0)	-0.51 (-0.63 to -0.3)

Note: Estimates are for populations aged 55 years and above among men and women in China. Rates are reported per 100000 person-years. Cancer types are listed alphabetically. Other malignant neoplasms are cancers without a detailed GBD cause separately listed. DALYs=disability-adjusted life-years. UI=uncertainty interval.

Table S5 The death cases and death rate of 29 cancers among men and women over 55+ years old in China in 1990 and 2019, and percentage change in death cases, annual rate of change in death rate from 1990 to 2019

Cause	Deaths*100 in 1990 (95% UI)		Deaths*100 in 2019 (95% UI)		Percentage change in deaths (95% UI)	
	Men	Women	Men	Women	Men	Women
Bladder cancer	102.5 (86.2-118.1)	45.7 (38.1-54.5)	290 (236.5-351.7)	79.7 (64.4-97.6)	182.9 (119.1 to 264.1)	74.6 (31 to 131.5)
Brain and central nervous system cancer	86.1 (61.1-125.7)	72.5 (55.7-98.6)	226.9 (136.8-297.2)	189.5 (132.2-244.5)	163.4 (58.9 to 280.9)	161.6 (49.3 to 272.5)
Breast cancer	2.7 (2.2-3.3)	233.6 (196.2-274.7)	22.2 (17.1-27.6)	655.8 (527.7-803.4)	717.4 (485.6 to 1025.8)	180.7 (118.6 to 264.7)
Cervical cancer	0 (0-0)	163 (129.5-259.2)	0 (0-0)	350.1 (205.4-446.1)	0 (0 to 0)	114.8 (-2.7 to 207.6)
Colon and rectum cancer	303 (252.5-353.7)	279.9 (236.3-327.9)	1340.4 (1084.5-1632.4)	834 (677.7-1004.9)	342.3 (239 to 472.1)	197.9 (134.9 to 280.9)
Esophageal cancer	953 (598-1149.3)	541.3 (302.2-640.2)	1729.8 (1305.8-2140.7)	567.1 (380.3-715.1)	81.5 (37.5 to 155.9)	4.8 (-19 to 44.4)
Gallbladder and biliary tract cancer	42.2 (33.5-73.3)	55.9 (43.4-98.8)	152 (110.9-191.2)	150.8 (92.5-192.1)	259.9 (76.8 to 424.1)	169.8 (13.1 to 296.2)
Hodgkin lymphoma	14.9 (7.2-19.9)	10 (4.6-13.5)	12.1 (7.9-16)	6.8 (4.3-8.8)	-18.7 (-45.1 to 56.6)	-32.2 (-51.7 to 18.1)
Kidney cancer	20.6 (16.7-25.2)	16.5 (14-19.1)	127.9 (99.8-158.3)	58.6 (47.1-71.2)	521.4 (346.9 to 771.1)	254.1 (176.2 to 358.6)

Larynx cancer	69.1 (56.8-80.9)	21.3 (18-24.6)	144.4 (115.6-177)	30.8 (24.8-37)	109 (58.1 to 178.9)	44.8 (13.9 to 84.7)
Leukemia	90.2 (71.7-116.4)	80.2 (65.5-100.3)	193.9 (142.6-246.7)	146.1 (111.4-182.3)	114.9 (50.6 to 194.5)	82.2 (22.1 to 146.5)
Lip and oral cavity cancer	31.6 (25.8-37.4)	19.9 (16.7-23.5)	141.6 (114.3-175.1)	41.7 (33.8-50.3)	347.9 (227.5 to 513.9)	109.7 (61.6 to 171.7)
Liver cancer	931.5 (749.8-1140.5)	485.7 (398.8-597.7)	922.9 (733.9-1141.3)	404.3 (325.6-493)	-0.9 (-27.5 to 35.9)	-16.8 (-40.1 to 12.8)
Malignant skin melanoma	7.2 (4.5-10.4)	8.3 (5.4-13.8)	15.6 (9.5-22.3)	20.5 (11.1-27.6)	118.2 (49.6 to 203.7)	147.2 (18.2 to 272.8)
Mesothelioma	2.8 (2.2-4.2)	4.3 (3-6.9)	10.2 (7.9-13.1)	8.9 (5.7-11.5)	260.8 (123.8 to 409.1)	106.9 (8.2 to 239.4)
Multiple myeloma	19.6 (14.9-30)	22.6 (17-32.7)	62.6 (40.6-83.5)	48.1 (34.6-62.6)	219.6 (66.9 to 360.8)	112.7 (16.7 to 188.8)
Nasopharynx cancer	93.7 (76.7-111.8)	53.2 (42.7-64)	139 (109-171.5)	52.2 (41.2-64.4)	48.4 (11.5 to 101.4)	-1.9 (-26.6 to 33.2)
Non-Hodgkin lymphoma	49.9 (40.8-59.8)	38.6 (32.6-45.1)	209.5 (167.1-260)	115.8 (93.8-140.7)	319.5 (210.4 to 469.5)	199.8 (134.9 to 284.1)
Non-melanoma skin cancer	21.7 (18-25.2)	17.6 (14.8-20.6)	71.2 (58.2-85.9)	65.7 (51-80.1)	228.1 (153.2 to 328.4)	273.8 (167 to 387.5)
Other malignant neoplasms	123.6 (98.2-149.7)	111.2 (91.7-134.8)	317.7 (231.2-398.3)	225.2 (177.8-279.5)	157.1 (76.6 to 253.1)	102.6 (47 to 168.6)
Other pharynx cancer	15 (12.5-17.6)	5.5 (4.6-6.5)	35.9 (28.2-44.6)	8.4 (6.7-10.2)	140.4 (75.6 to 223.1)	51.7 (15.1 to 100.6)
Ovarian cancer	0	46.9	0	212.5	0	352.6

	(0-0)	(35.8-73.6)	(0-0)	(147.4-268.1)	(0 to 0)	(135.4 to 572.4)
Pancreatic cancer	118.3	90.8	572.6	417.6	384	359.7
	(97.3-142.7)	(76.7-106)	(455.8-703.6)	(338.1-506)	(254.1 to 567.7)	(255.6 to 492.9)
Prostate cancer	196.3	0	532.2	0	171.1	0
	(152.8-238.5)	(0-0)	(420.5-696.7)	(0-0)	(107.7 to 254.2)	(0 to 0)
Stomach cancer	1549.2	861.6	2552.8	1075.2	64.8	24.8
	(1275.3-1825.5)	(724.9-999.7)	(2045.9-3106.2)	(879.7-1312.1)	(25.2 to 116.8)	(-1.7 to 60.9)
Testicular cancer	2.2	0	6.6	0	205.4	0
	(1.8-2.6)	(0-0)	(5.2-8)	(0-0)	(128.3 to 304.6)	(0 to 0)
Thyroid cancer	8.3	14.6	33.5	25.7	302.5	75.5
	(6.8-10.5)	(12-20)	(25.4-41.4)	(20.4-31.7)	(167.2 to 446.2)	(28.3 to 131.4)
Tracheal, bronchus, and lung cancer	1412.2	616.7	4632.9	2056	228.1	233.4
	(1164.5-1688.9)	(516.8-723.5)	(3679.4-5703.5)	(1667-2466.8)	(139.3 to 341.7)	(160.7 to 326.2)
Uterine cancer	0	70.9	0	91.6	0	29.1
	(0-0)	(56-87.3)	(0-0)	(71.3-133.6)	(0 to 0)	(-2.8 to 83.5)
Cause	Death rate in 1990 (95% UI)		Death rate in 2019 (95% UI)		Annual rate of change in death rate (95% UI)	
	Men	Women	Men	Women	Men	Women
Bladder cancer	14.4	6.2	17	4.4	0.18	-0.29
	(12.1-16.6)	(5.2-7.4)	(13.8-20.6)	(3.6-5.4)	(-0.09 to 0.51)	(-0.47 to -0.06)
Brain and central nervous system cancer	12.1	9.9	13.3	10.5	0.09	0.06
	(8.6-17.7)	(7.6-13.4)	(8-17.4)	(7.3-13.5)	(-0.34 to 0.58)	(-0.39 to 0.51)
Breast cancer	0.4	31.8	1.3	36.3	2.4	0.14
	(0.3-0.5)	(26.7-37.4)	(1-1.6)	(29.2-44.4)	(1.43 to 3.68)	(-0.11 to 0.48)

Cervical cancer	0 (0-0)	22.2 (17.6-35.3)	0 (0-0)	19.4 (11.4-24.7)	0 (0 to 0)	-0.13 (-0.6 to 0.25)
Colon and rectum cancer	42.7 (35.6-49.8)	38.1 (32.1-44.6)	78.4 (63.5-95.5)	46.1 (37.5-55.6)	0.84 (0.41 to 1.38)	0.21 (-0.05 to 0.55)
Esophageal cancer	134.2 (84.2-161.9)	73.6 (41.1-87.1)	101.2 (76.4-125.3)	31.4 (21-39.5)	-0.25 (-0.43 to 0.06)	-0.57 (-0.67 to -0.41)
Gallbladder and biliary tract cancer	5.9 (4.7-10.3)	7.6 (5.9-13.4)	8.9 (6.5-11.2)	8.3 (5.1-10.6)	0.5 (-0.27 to 1.18)	0.1 (-0.54 to 0.61)
Hodgkin lymphoma	2.1 (1-2.8)	1.4 (0.6-1.8)	0.7 (0.5-0.9)	0.4 (0.2-0.5)	-0.66 (-0.77 to -0.35)	-0.72 (-0.8 to -0.52)
Kidney cancer	2.9 (2.3-3.6)	2.2 (1.9-2.6)	7.5 (5.8-9.3)	3.2 (2.6-3.9)	1.58 (0.86 to 2.62)	0.44 (0.12 to 0.86)
Larynx cancer	9.7 (8-11.4)	2.9 (2.5-3.3)	8.5 (6.8-10.4)	1.7 (1.4-2)	-0.13 (-0.34 to 0.16)	-0.41 (-0.54 to -0.25)
Leukemia	12.7 (10.1-16.4)	10.9 (8.9-13.6)	11.3 (8.3-14.4)	8.1 (6.2-10.1)	-0.11 (-0.37 to 0.22)	-0.26 (-0.5 to 0)
Lip and oral cavity cancer	4.5 (3.6-5.3)	2.7 (2.3-3.2)	8.3 (6.7-10.2)	2.3 (1.9-2.8)	0.86 (0.36 to 1.55)	-0.15 (-0.34 to 0.1)
Liver cancer	131.2 (105.6-160.6)	66.1 (54.2-81.3)	54 (42.9-66.8)	22.4 (18-27.3)	-0.59 (-0.7 to -0.44)	-0.66 (-0.76 to -0.54)
Malignant skin melanoma	1 (0.6-1.5)	1.1 (0.7-1.9)	0.9 (0.6-1.3)	1.1 (0.6-1.5)	-0.09 (-0.38 to 0.26)	0 (-0.52 to 0.52)
Mesothelioma	0.4 (0.3-0.6)	0.6 (0.4-0.9)	0.6 (0.5-0.8)	0.5 (0.3-0.6)	0.5 (-0.07 to 1.11)	-0.16 (-0.56 to 0.38)
Multiple myeloma	2.8 (2.1-4.2)	3.1 (2.3-4.4)	3.7 (2.4-4.9)	2.7 (1.9-3.5)	0.33 (-0.31 to 0.91)	-0.14 (-0.53 to 0.17)

Nasopharynx cancer	13.2 (10.8-15.7)	7.2 (5.8-8.7)	8.1 (6.4-10)	2.9 (2.3-3.6)	-0.38 (-0.54 to -0.16)	-0.6 (-0.7 to -0.46)
Non-Hodgkin lymphoma	7 (5.7-8.4)	5.3 (4.4-6.1)	12.3 (9.8-15.2)	6.4 (5.2-7.8)	0.74 (0.29 to 1.37)	0.22 (-0.05 to 0.56)
Non-melanoma skin cancer	3.1 (2.5-3.6)	2.4 (2-2.8)	4.2 (3.4-5)	3.6 (2.8-4.4)	0.36 (0.05 to 0.78)	0.52 (0.09 to 0.98)
Other malignant neoplasms	17.4 (13.8-21.1)	15.1 (12.5-18.3)	18.6 (13.5-23.3)	12.5 (9.8-15.5)	0.07 (-0.27 to 0.47)	-0.18 (-0.4 to 0.09)
Other pharynx cancer	2.1 (1.8-2.5)	0.8 (0.6-0.9)	2.1 (1.6-2.6)	0.5 (0.4-0.6)	0 (-0.27 to 0.34)	-0.38 (-0.53 to -0.18)
Ovarian cancer	0 (0-0)	6.4 (4.9-10)	0 (0-0)	11.7 (8.2-14.8)	0 (0 to 0)	0.84 (-0.04 to 1.73)
Pancreatic cancer	16.7 (13.7-20.1)	12.4 (10.4-14.4)	33.5 (26.7-41.2)	23.1 (18.7-28)	1.01 (0.47 to 1.77)	0.87 (0.45 to 1.41)
Prostate cancer	27.6 (21.5-33.6)	0 (0-0)	31.1 (24.6-40.8)	0 (0-0)	0.13 (-0.14 to 0.47)	0 (0 to 0)
Stomach cancer	218.2 (179.6-257.1)	117.2 (98.6-136)	149.4 (119.7-181.8)	59.5 (48.6-72.5)	-0.32 (-0.48 to -0.1)	-0.49 (-0.6 to -0.35)
Testicular cancer	0.3 (0.2-0.4)	0 (0-0)	0.4 (0.3-0.5)	0 (0-0)	0.27 (-0.05 to 0.68)	0 (0 to 0)
Thyroid cancer	1.2 (1-1.5)	2 (1.6-2.7)	2 (1.5-2.4)	1.4 (1.1-1.8)	0.67 (0.11 to 1.27)	-0.29 (-0.48 to -0.06)
Tracheal, bronchus, and lung cancer	198.9 (164-237.9)	83.9 (70.3-98.4)	271.1 (215.3-333.7)	113.7 (92.2-136.4)	0.36 (-0.01 to 0.83)	0.36 (0.06 to 0.73)
Uterine cancer	0 (0-0)	9.6 (7.6-11.9)	0 (0-0)	5.1 (3.9-7.4)	0 (0 to 0)	-0.48 (-0.6 to -0.25)

Note: Estimates are for populations aged 55 years and above among men and women in China. Rates are reported per 100000 person-years. Cancer types are listed alphabetically. Other malignant neoplasms are cancers without a detailed GBD cause separately listed. UI=uncertainty interval.

Table S6 The incident cases and incident rate of 29 cancers among men and women over 55+ years old in China in 1990 and 2019, and percentage change in incident cases, annual rate of change in incidence rate from 1990 to 2019

Cause	Incident cases*1000 in 1990 (95% UI)		Incident cases*1000 in 2019 (95% UI)		Percentage change in incident cases (95% UI)	
	Men	Women	Men	Women	Men	Women
Bladder cancer	13.9 (11.7-16.3)	5.4 (4.5-6.4)	67.1 (53.7-81.6)	14.3 (11.3-17.8)	382.2 (272.8 to 535.4)	165.6 (95.4 to 259.2)
Brain and central nervous system cancer	8.4 (5.9-12.5)	7.1 (5.4-9.8)	23.8 (14.9-31.5)	23 (16.7-29.2)	182.3 (65.4 to 307.2)	221.7 (80.9 to 365)
Breast cancer	0.4 (0.3-0.4)	37.2 (31.2-43.7)	5.2 (3.9-6.6)	203.3 (163-252.6)	1336 (921.1 to 1910.1)	447 (317.8 to 622)
Cervical cancer	0 (0-0)	18.3 (14.6-29.9)	0 (0-0)	48.2 (26.7-61.1)	0 (0 to 0)	163 (13.3 to 282.5)
Colon and rectum cancer	38.2 (32-44.9)	34.3 (28.9-39.8)	290.7 (232.6-358.8)	173.5 (141.1-212.6)	660.7 (481.9 to 904)	406.3 (295.1 to 552.3)
Esophageal cancer	91.7 (60-110.5)	51.8 (28.5-61.6)	177.6 (131.2-219.9)	64.9 (41.5-82.1)	93.6 (47.2 to 171.1)	25.4 (-4.3 to 75.7)
Gallbladder and biliary tract cancer	4.2 (3.3-7.3)	5.5 (4.3-9.9)	16.5 (11-20.6)	16.7 (10-21.8)	290.8 (82.4 to 489)	203 (21.1 to 347.7)
Hodgkin lymphoma	1.6 (0.7-2.1)	1 (0.5-1.4)	2.8 (1.8-3.7)	1.5 (1-2)	78.8 (21.1 to 215.3)	50.8 (5.8 to 157.8)
Kidney cancer	2.8 (2.2-3.5)	2.2 (1.8-2.5)	24.6 (19.2-30.9)	10.6 (8.6-13.2)	775.1 (526.9 to 1130.7)	388.2 (276 to 531.9)
Larynx cancer	8.2 (6.8-9.7)	2.4 (2-2.8)	31.6 (24.9-39.3)	5.5 (4.4-6.7)	283.4 (188.5 to 419)	131.3 (76.9 to 203.3)
Leukemia	9.8	8.7	34.2	28.4	249.2	224.9

	(7.7-12.7)	(7.2-10.7)	(25.6-43.6)	(21.3-36.3)	(145.8 to 386.9)	(117.1 to 343.5)
Lip and oral cavity cancer	4.4	3.1	25.1	8.5	467.1	172.2
	(3.6-5.2)	(2.6-3.7)	(19.7-31.1)	(6.9-10.4)	(316.2 to 690.3)	(108.8 to 252.1)
Liver cancer	91.4	45.8	99.6	40.2	9	-12.3
	(73.3-113.3)	(37.7-56.5)	(79.7-123.3)	(32.3-49.1)	(-20.5 to 51.2)	(-36.6 to 18.7)
Malignant skin melanoma	0.8	0.9	4.1	4.8	399.4	422.9
	(0.5-1.2)	(0.6-1.5)	(2.4-6)	(2.5-6.5)	(220.5 to 614.6)	(142.9 to 677.2)
Mesothelioma	0.3	0.4	1	0.8	246	102
	(0.2-0.4)	(0.3-0.7)	(0.8-1.3)	(0.5-1.1)	(108.6 to 396.7)	(4 to 227.7)
Multiple myeloma	2.2	2.4	8.6	6.1	294.7	152.7
	(1.7-3.3)	(1.9-3.6)	(5.8-11.6)	(4.4-8)	(100.6 to 467.4)	(35.5 to 253.5)
Nasopharynx cancer	9.7	5.4	35	12.4	259.9	131.2
	(7.9-11.5)	(4.4-6.4)	(27.1-44.5)	(9.7-15.5)	(165.5 to 391.9)	(72 to 221.6)
Non-Hodgkin lymphoma	4.8	3.6	39.8	21.8	728.6	497.7
	(3.9-5.8)	(3.1-4.3)	(31.5-49.7)	(17.4-27)	(522.4 to 1022.6)	(351.3 to 679.2)
Non-melanoma skin cancer	12.6	11.2	124.1	88.5	886.7	692.7
	(10.3-15.3)	(9-13.9)	(105.1-145.5)	(73.4-105.3)	(818.4 to 977.4)	(644.4 to 763.1)
Other malignant neoplasms	14.8	11.7	81	45	445.6	283.9
	(11.7-18.2)	(9.7-14)	(60.5-101.5)	(35.9-55.8)	(280.3 to 658.6)	(180.7 to 421.1)
Other pharynx cancer	1.5	0.6	5.3	1.8	252.2	201.6
	(1.3-1.8)	(0.5-0.7)	(4.2-6.7)	(1.4-2.2)	(160 to 372.5)	(124.7 to 301.6)
Ovarian cancer	0	5.2	0	25.9	0	394.9
	(0-0)	(4-8.2)	(0-0)	(17.7-32.5)	(0 to 0)	(154.1 to 624.5)
Pancreatic cancer	11.4	8.6	55.3	39.3	385.4	359.1
	(9.3-13.7)	(7.2-10)	(44.1-67.7)	(31.7-48.2)	(259.7 to 565.4)	(257.3 to 486.1)
Prostate cancer	24.9	0	145.5	0	483.9	0

	(19-30)	(0-0)	(112.5-193.1)	(0-0)	(335.6 to 704.4)	(0 to 0)
Stomach cancer	157.5	83.5	364.3	132.1	131.3	58.2
	(131.5-184.9)	(70.7-96.8)	(290.3-446.6)	(107.6-161.7)	(75.3 to 204.5)	(22.3 to 101.4)
Testicular cancer	0.4	0	3.9	0	783.9	0
	(0.4-0.5)	(0-0)	(2.9-4.9)	(0-0)	(544.3 to 1101.9)	(0 to 0)
Thyroid cancer	1.1	2.6	7.3	10.3	554.9	287.8
	(0.9-1.4)	(2.2-3.5)	(5.5-9.2)	(8-13.2)	(339.5 to 812.8)	(183.4 to 434)
Tracheal, bronchus, and lung cancer	138.4	59.3	502.2	219.6	262.9	270.4
	(113.2-164.7)	(49.8-69.7)	(395.4-615.3)	(177.4-267.7)	(169.2 to 396.2)	(185.3 to 380.7)
Uterine cancer	0	12.6	0	35.3	0	180
	(0-0)	(9.9-15.4)	(0-0)	(27.4-51.3)	(0 to 0)	(104.8 to 307)
Cause	Incidence rate in 1990 (95% UI)		Incidence rate in 2019 (95% UI)		Annual rate of change (95% UI)	
	Men	Women	Men	Women	Men	Women
Bladder cancer	19.6	7.3	39.3	7.9	1	0.08
	(16.5-22.9)	(6.1-8.7)	(31.4-47.7)	(6.3-9.9)	(0.55 to 1.64)	(-0.21 to 0.46)
Brain and central nervous system cancer	11.9	9.7	13.9	12.7	0.17	0.31
	(8.3-17.6)	(7.3-13.3)	(8.7-18.4)	(9.2-16.2)	(-0.31 to 0.69)	(-0.26 to 0.89)
Breast cancer	0.5	50.6	3	112.4	4.97	1.22
	(0.4-0.6)	(42.4-59.4)	(2.3-3.9)	(90.1-139.7)	(3.24 to 7.35)	(0.7 to 1.93)
Cervical cancer	0	24.9	0	26.6	0	0.07
	(0-0)	(19.9-40.7)	(0-0)	(14.8-33.8)	(0 to 0)	(-0.54 to 0.55)
Colon and rectum cancer	53.8	46.6	170.1	96	2.16	1.06
	(45.1-63.2)	(39.3-54.1)	(136.1-209.9)	(78-117.6)	(1.42 to 3.17)	(0.61 to 1.65)
Esophageal cancer	129.2	70.5	103.9	35.9	-0.2	-0.49
	(84.5-155.7)	(38.8-83.8)	(76.8-128.7)	(22.9-45.4)	(-0.39 to 0.13)	(-0.61 to -0.29)

Gallbladder and biliary tract cancer	5.9 (4.6-10.2)	7.5 (5.9-13.5)	9.6 (6.5-12.1)	9.2 (5.5-12.1)	0.62 (-0.24 to 1.45)	0.23 (-0.51 to 0.82)
Hodgkin lymphoma	2.2 (1-3)	1.4 (0.6-1.9)	1.7 (1-2.2)	0.9 (0.5-1.1)	-0.26 (-0.5 to 0.31)	-0.39 (-0.57 to 0.05)
Kidney cancer	4 (3.2-4.9)	3 (2.5-3.4)	14.4 (11.2-18.1)	5.9 (4.7-7.3)	2.64 (1.6 to 4.11)	0.98 (0.53 to 1.57)
Larynx cancer	11.6 (9.5-13.7)	3.2 (2.7-3.8)	18.5 (14.5-23)	3.1 (2.4-3.7)	0.59 (0.2 to 1.16)	-0.06 (-0.28 to 0.23)
Leukemia	13.8 (10.8-17.9)	11.9 (9.7-14.5)	20 (15-25.5)	15.7 (11.8-20.1)	0.45 (0.02 to 1.02)	0.32 (-0.12 to 0.8)
Lip and oral cavity cancer	6.2 (5.1-7.4)	4.2 (3.6-5)	14.7 (11.6-18.2)	4.7 (3.8-5.7)	1.36 (0.73 to 2.28)	0.11 (-0.15 to 0.43)
Liver cancer	128.7 (103.3-159.6)	62.4 (51.3-76.9)	58.3 (46.6-72.1)	22.2 (17.9-27.1)	-0.55 (-0.67 to -0.37)	-0.64 (-0.74 to -0.52)
Malignant skin melanoma	1.2 (0.7-1.7)	1.2 (0.8-2)	2.4 (1.4-3.5)	2.6 (1.4-3.6)	1.07 (0.33 to 1.97)	1.13 (-0.01 to 2.16)
Mesothelioma	0.4 (0.3-0.6)	0.6 (0.4-0.9)	0.6 (0.5-0.7)	0.5 (0.3-0.6)	0.44 (-0.13 to 1.06)	-0.18 (-0.58 to 0.33)
Multiple myeloma	3.1 (2.3-4.6)	3.3 (2.5-4.9)	5.1 (3.4-6.8)	3.4 (2.4-4.4)	0.64 (-0.17 to 1.36)	0.03 (-0.45 to 0.44)
Nasopharynx cancer	13.7 (11.1-16.2)	7.3 (5.9-8.7)	20.5 (15.9-26)	6.8 (5.4-8.6)	0.5 (0.1 to 1.04)	-0.06 (-0.3 to 0.31)
Non-Hodgkin lymphoma	6.8 (5.5-8.1)	5 (4.2-5.8)	23.3 (18.4-29.1)	12 (9.6-14.9)	2.44 (1.59 to 3.66)	1.43 (0.83 to 2.17)
Non-melanoma skin cancer	17.7 (14.5-21.6)	15.2 (12.3-18.9)	72.6 (61.5-85.1)	49 (40.6-58.2)	3.1 (2.82 to 3.48)	2.22 (2.03 to 2.51)

Other malignant neoplasms	20.9 (16.5-25.7)	15.9 (13.2-19.1)	47.4 (35.4-59.4)	24.9 (19.8-30.9)	1.27 (0.58 to 2.15)	0.56 (0.14 to 1.12)
Other pharynx cancer	2.1 (1.8-2.5)	0.8 (0.7-0.9)	3.1 (2.5-3.9)	1 (0.8-1.2)	0.46 (0.08 to 0.96)	0.23 (-0.09 to 0.63)
Ovarian cancer	0 (0-0)	7.1 (5.5-11.2)	0 (0-0)	14.3 (9.8-18)	0 (0 to 0)	1.01 (0.03 to 1.95)
Pancreatic cancer	16.1 (13.1-19.2)	11.6 (9.9-13.5)	32.4 (25.8-39.6)	21.7 (17.5-26.6)	1.02 (0.49 to 1.76)	0.87 (0.45 to 1.38)
Prostate cancer	35.1 (26.8-42.3)	0 (0-0)	85.1 (65.8-113)	0 (0-0)	1.43 (0.81 to 2.34)	0 (0 to 0)
Stomach cancer	221.9 (185.2-260.5)	113.6 (96.2-131.7)	213.2 (169.9-261.4)	73.1 (59.5-89.4)	-0.04 (-0.27 to 0.26)	-0.36 (-0.5 to -0.18)
Testicular cancer	0.6 (0.5-0.8)	0 (0-0)	2.3 (1.7-2.9)	0 (0-0)	2.67 (1.68 to 3.99)	0 (0 to 0)
Thyroid cancer	1.6 (1.3-2)	3.6 (2.9-4.8)	4.3 (3.2-5.4)	5.7 (4.4-7.3)	1.72 (0.83 to 2.79)	0.58 (0.15 to 1.17)
Tracheal, bronchus, and lung cancer	194.9 (159.4-232)	80.7 (67.7-94.8)	293.9 (231.4-360.1)	121.5 (98.1-148)	0.51 (0.12 to 1.06)	0.51 (0.16 to 0.95)
Uterine cancer	0 (0-0)	17.2 (13.5-21)	0 (0-0)	19.5 (15.2-28.4)	0 (0 to 0)	0.14 (-0.17 to 0.65)

Note: Estimates are for populations aged 55 years and above among men and women in China. Rates are reported per 100000 person-years. Cancer types are listed alphabetically. Other malignant neoplasms are cancers without a detailed GBD cause separately listed. UI=uncertainty interval.

Table S7 The DALYs and DALY rate in the risks for 20 cancers among men in 1990 and 2019, and percentage change in DALYs, annual rate of change in DALY rate from 1990 to 2019

Risks	DALYs in 1990 (95% UI)	DALYs in 2019 (95% UI)	Percentage change in DALYs (95% UI)	DALY rate in 1990 (95% UI)	DALY rate in 2019 (95% UI)	Annual rate of change in DALY rate (95% UI)
Bladder cancer						
High fasting plasma glucose	12785 (1999-30191)	40055 (6568-92991)	213.3 (145.4 to 303.9)	10.63 (1.66-25.09)	12.69 (2.08-29.46)	0.19 (-0.06 to 0.54)
Smoking	122824 (94629-150764)	311877 (231366-400449)	153.9 (94.4 to 232.9)	102.08 (78.65-125.3)	98.79 (73.29-126.85)	-0.03 (-0.26 to 0.27)
Breast cancer						
Alcohol use	860 (625-1139)	7726 (5174-10433)	798.6 (509.8 to 1165.9)	0.71 (0.52-0.95)	2.45 (1.64-3.3)	2.42 (1.32 to 3.82)
Diet high in red meat	197 (65-298)	2478 (1130-3746)	1157.8 (688.6 to 2219)	0.16 (0.05-0.25)	0.78 (0.36-1.19)	3.79 (2.01 to 7.84)
Secondhand smoke	125 (29-241)	950 (215-1802)	658.7 (385.6 to 1038.3)	0.1 (0.02-0.2)	0.3 (0.07-0.57)	1.89 (0.85 to 3.34)
Colon and rectum cancer						
Alcohol use	81231 (58152-107365)	384828 (261759-533541)	373.7 (247.1 to 560.3)	67.51 (48.33-89.23)	121.9 (82.91-169)	0.81 (0.32 to 1.52)
Diet high in processed meat	4747 (2258-7768)	31742 (6869-59647)	568.7 (158.9 to 919.2)	3.95 (1.88-6.46)	10.05 (2.18-18.89)	1.55 (-0.01 to 2.88)
Diet high in red meat	23488 (3147-58861)	168658 (37465-335190)	618 (338 to 2185.7)	19.52 (2.62-48.92)	53.42 (11.87-106.17)	1.74 (0.67 to 7.71)
Diet low in calcium	147725 (111107-196012)	440453 (292864-620833)	198.2 (113.8 to 311.4)	122.78 (92.34-162.91)	139.52 (92.77-196.66)	0.14 (-0.19 to 0.57)

Diet low in fiber	13848 (5007-28646)	21819 (8815-51405)	57.6 (-12.6 to 176.8)	11.51 (4.16-23.81)	6.91 (2.79-16.28)	-0.4 (-0.67 to 0.05)
Diet low in milk	132517 (88231-179082)	535640 (346608-745316)	304.2 (207.7 to 430.1)	110.14 (73.33-148.84)	169.67 (109.79-236.09)	0.54 (0.17 to 1.02)
Diet low in whole grains	107838 (39969-146808)	447158 (165154-626933)	314.7 (214.4 to 441.2)	89.63 (33.22-122.02)	141.64 (52.31-198.59)	0.58 (0.2 to 1.06)
High body-mass index	21741 (4540-52179)	195138 (73968-368477)	797.5 (500.2 to 1804)	18.07 (3.77-43.37)	61.81 (23.43-116.72)	2.42 (1.29 to 6.26)
High fasting plasma glucose	41691 (7177-100147)	204594 (36016-497947)	390.7 (277.9 to 545.3)	34.65 (5.97-83.24)	64.81 (11.41-157.73)	0.87 (0.44 to 1.46)
Low physical activity	21333 (4739-45421)	80062 (16765-174347)	275.3 (167.1 to 422)	17.73 (3.94-37.75)	25.36 (5.31-55.23)	0.43 (0.02 to 0.99)
Smoking	174956 (111017-240698)	705341 (457502-1019230)	303.2 (200.3 to 442.4)	145.41 (92.27-200.05)	223.42 (144.92-322.85)	0.54 (0.14 to 1.07)
Esophageal cancer						
Alcohol use	591396 (363251-809072)	1092482 (756484-1498491)	84.7 (33.2 to 170.9)	491.53 (301.91-672.45)	346.05 (239.62-474.66)	-0.3 (-0.49 to 0.03)
Chewing tobacco	15395 (6999-27039)	27042 (12652-46830)	75.6 (3.3 to 205.6)	12.8 (5.82-22.47)	8.57 (4.01-14.83)	-0.33 (-0.61 to 0.16)
Diet low in fruits	373685 (109071-695450)	264672 (38755-732741)	-29.2 (-79.7 to 40.1)	310.58 (90.65-578.01)	83.84 (12.28-232.1)	-0.73 (-0.92 to -0.47)
Diet low in vegetables	147774 (7113-319811)	13100 (6386-30768)	-91.1 (-95.7 to 1.6)	122.82 (5.91-265.81)	4.15 (2.02-9.75)	-0.97 (-0.98 to -0.61)
High body-mass index	142288 (13645-418724)	517607 (76076-1192708)	263.8 (130.4 to 766.1)	118.26 (11.34-348.02)	163.96 (24.1-377.8)	0.39 (-0.12 to 2.3)
Smoking	1336236	2172540	62.6	1110.59	688.17	-0.38

	(824908-1634936)	(1638397-2754679)	(22.2 to 132.8)	(685.61-1358.85)	(518.98-872.57)	(-0.53 to -0.11)
Gallbladder and biliary tract cancer						
High body-mass index	2619 (289-7900)	19075 (3144-44654)	628.4 (252.7 to 1610.4)	2.18 (0.24-6.57)	6.04 (1-14.14)	1.78 (0.34 to 5.52)
Kidney cancer						
High body-mass index	2099 (423-5240)	26265 (9897-49318)	1151.1 (679.3 to 2726.2)	1.74 (0.35-4.35)	8.32 (3.14-15.62)	3.77 (1.97 to 9.77)
Occupational exposure to trichloroethylene	41 (9-79)	234 (49-454)	469.2 (289.6 to 706.3)	0.03 (0.01-0.07)	0.07 (0.02-0.14)	1.17 (0.48 to 2.07)
Smoking	14495 (9362-20061)	82663 (55482-113955)	470.3 (296.1 to 722.1)	12.05 (7.78-16.67)	26.18 (17.57-36.1)	1.17 (0.51 to 2.13)
Larynx cancer						
Alcohol use	39170 (21689-57211)	87820 (50459-127306)	124.2 (61.6 to 221.3)	32.56 (18.03-47.55)	27.82 (15.98-40.33)	-0.15 (-0.38 to 0.22)
Occupational exposure to asbestos	991 (453-1871)	3180 (1448-5387)	221 (71.3 to 427.3)	0.82 (0.38-1.56)	1.01 (0.46-1.71)	0.22 (-0.35 to 1.01)
Occupational exposure to sulfuric acid	6879 (2733-12964)	12432 (5078-24436)	80.7 (32.6 to 145.7)	5.72 (2.27-10.78)	3.94 (1.61-7.74)	-0.31 (-0.49 to -0.06)
Smoking	140658 (113773-167707)	277080 (217037-342169)	97 (48.1 to 164.1)	116.91 (94.56-139.39)	87.77 (68.75-108.39)	-0.25 (-0.44 to 0.01)
Leukemia						
High body-mass index	3478 (658-8943)	15869 (5369-32183)	356.3 (194.2 to 907.9)	2.89 (0.55-7.43)	5.03 (1.7-10.19)	0.74 (0.12 to 2.84)
Occupational exposure to benzene	662 (191-1162)	1392 (393-2457)	110.1 (50 to 194.6)	0.55 (0.16-0.97)	0.44 (0.12-0.78)	-0.2 (-0.43 to 0.12)

Occupational exposure to formaldehyde	327 (202-493)	678 (406-1014)	107.2 (42.5 to 198.1)	0.27 (0.17-0.41)	0.21 (0.13-0.32)	-0.21 (-0.46 to 0.14)
Smoking	97485 (58452-141406)	196096 (117789-282874)	101.2 (35.6 to 186.8)	81.02 (48.58-117.53)	62.12 (37.31-89.6)	-0.23 (-0.48 to 0.09)
Lip and oral cavity cancer						
Alcohol use	32961 (24583-42658)	153305 (112965-202117)	365.1 (229.8 to 558.4)	27.4 (20.43-35.45)	48.56 (35.78-64.02)	0.77 (0.26 to 1.51)
Chewing tobacco	657 (278-1214)	2963 (1322-5463)	351 (157.4 to 670.5)	0.55 (0.23-1.01)	0.94 (0.42-1.73)	0.72 (-0.02 to 1.94)
Smoking	44029 (34406-54095)	182540 (139677-231574)	314.6 (201.2 to 474.2)	36.59 (28.6-44.96)	57.82 (44.24-73.35)	0.58 (0.15 to 1.19)
Liver cancer						
Alcohol use	253402 (162663-379907)	262888 (176336-380940)	3.7 (-24.7 to 47.7)	210.61 (135.19-315.75)	83.27 (55.86-120.67)	-0.6 (-0.71 to -0.44)
Drug use	247259 (187197-320162)	251142 (184994-321942)	1.6 (-26.5 to 40.9)	205.5 (155.59-266.1)	79.55 (58.6-101.98)	-0.61 (-0.72 to -0.46)
High body-mass index	112579 (18242-304688)	227927 (65438-500744)	102.5 (30 to 378.7)	93.57 (15.16-253.24)	72.2 (20.73-158.62)	-0.23 (-0.5 to 0.82)
High fasting plasma glucose	9213 (1738-23433)	11538 (2331-28976)	25.2 (-6.5 to 74)	7.66 (1.44-19.48)	3.65 (0.74-9.18)	-0.52 (-0.64 to -0.34)
Smoking	658948 (341393-997762)	605053 (318983-907545)	-8.2 (-35.3 to 33.1)	547.67 (283.74-829.27)	191.66 (101.04-287.47)	-0.65 (-0.75 to -0.49)
Mesothelioma						
Occupational exposure to asbestos	5212 (3629-8485)	19522 (14901-25730)	274.6 (109.2 to 467.3)	4.33 (3.02-7.05)	6.18 (4.72-8.15)	0.43 (-0.2 to 1.16)
Multiple myeloma						

High body-mass index	785 (109-2409)	5250 (1179-12774)	568.7 (247.8 to 1460)	0.65 (0.09-2)	1.66 (0.37-4.05)	1.55 (0.33 to 4.95)
Nasopharynx cancer						
Alcohol use	110939 (81222-144576)	173953 (125976-225424)	56.8 (13.9 to 115.2)	92.21 (67.51-120.16)	55.1 (39.9-71.41)	-0.4 (-0.57 to -0.18)
Occupational exposure to formaldehyde	1050 (369-2090)	1555 (646-2846)	48 (0.3 to 131.6)	0.87 (0.31-1.74)	0.49 (0.2-0.9)	-0.44 (-0.62 to -0.12)
Smoking	100824 (69968-134298)	148473 (100701-203861)	47.3 (7.5 to 101.9)	83.8 (58.15-111.62)	47.03 (31.9-64.57)	-0.44 (-0.59 to -0.23)
Non-Hodgkin lymphoma						
High body-mass index	2002 (331-5568)	18459 (5351-41482)	822.2 (515.5 to 1906.1)	1.66 (0.28-4.63)	5.85 (1.69-13.14)	2.51 (1.35 to 6.65)
Other pharynx cancer						
Alcohol use	15930 (11758-20481)	40742 (28741-53770)	155.8 (79.3 to 257.5)	13.24 (9.77-17.02)	12.91 (9.1-17.03)	-0.03 (-0.32 to 0.36)
Smoking	24756 (20227-29911)	56918 (43444-72058)	129.9 (65.5 to 212.9)	20.58 (16.81-24.86)	18.03 (13.76-22.83)	-0.12 (-0.37 to 0.19)
Pancreatic cancer						
High body-mass index	3814 (-11-12755)	37427 (-168-103303)	881.4 (553.6 to 2039.1)	3.17 (-0.01-10.6)	11.86 (-0.05-32.72)	2.74 (1.49 to 7.15)
High fasting plasma glucose	16362 (2865-40678)	86759 (14902-212154)	430.3 (277.5 to 643.6)	13.6 (2.38-33.81)	27.48 (4.72-67.2)	1.02 (0.44 to 1.83)
Smoking	91458 (70475-115296)	408066 (304888-529984)	346.2 (217 to 521.6)	76.01 (58.57-95.83)	129.26 (96.58-167.88)	0.7 (0.21 to 1.37)
Prostate cancer						
Smoking	38000	92885	144.4	31.58	29.42	-0.07

	(17933-59320)	(43248-149606)	(80.2 to 246.7)	(14.9-49.3)	(13.7-47.39)	(-0.31 to 0.32)
Stomach cancer						
Diet high in sodium	323860 (7020-1200356)	472380 (10125-1762868)	45.9 (7.6 to 92.4)	269.17 (5.83-997.66)	149.63 (3.21-558.41)	-0.44 (-0.59 to -0.27)
Smoking	1090487 (812207-1389365)	1667273 (1233666-2126949)	52.9 (13.7 to 107.5)	906.34 (675.05-1154.75)	528.13 (390.78-673.73)	-0.42 (-0.57 to -0.21)
Thyroid cancer						
High body-mass index	717 (97-2082)	5479 (1332-12724)	664 (380.3 to 1636.9)	0.6 (0.08-1.73)	1.74 (0.42-4.03)	1.91 (0.83 to 5.62)
Tracheal, bronchus, and lung cancer						
Ambient particulate matter pollution	381671 (167324-658312)	2180066 (1473769-3001692)	471.2 (211.5 to 1133.5)	317.22 (139.07-547.14)	690.56 (466.83-950.82)	1.18 (0.19 to 3.7)
Diet low in fruits	169386 (54712-270628)	335828 (86434-561374)	98.3 (20.6 to 199.4)	140.78 (45.47-224.93)	106.38 (27.38-177.82)	-0.24 (-0.54 to 0.14)
High fasting plasma glucose	192980 (30451-475096)	679282 (112979-1668784)	252 (150.1 to 383.7)	160.39 (25.31-394.87)	215.17 (35.79-528.6)	0.34 (-0.05 to 0.84)
Household air pollution from solid fuels	690623 (410995-1021762)	416438 (181330-791662)	-39.7 (-70.4 to 6.9)	574 (341.59-849.22)	131.91 (57.44-250.77)	-0.77 (-0.89 to -0.59)
Occupational exposure to arsenic	19466 (6908-32716)	51070 (17669-86895)	162.4 (82.7 to 265.2)	16.18 (5.74-27.19)	16.18 (5.6-27.52)	0 (-0.3 to 0.39)
Occupational exposure to asbestos	61913 (31524-111419)	286422 (152526-479704)	362.6 (163.3 to 670.7)	51.46 (26.2-92.6)	90.73 (48.31-151.95)	0.76 (0 to 1.94)
Occupational exposure to beryllium	847 (553-1184)	2053 (1364-2916)	142.2 (68.7 to 241.3)	0.7 (0.46-0.98)	0.65 (0.43-0.92)	-0.08 (-0.36 to 0.3)

Occupational exposure to cadmium	1907 (1275-2619)	4991 (3315-6768)	161.8 (84.1 to 269.3)	1.58 (1.06-2.18)	1.58 (1.05-2.14)	0 (-0.3 to 0.41)
Occupational exposure to chromium	3648 (2758-4769)	10177 (7339-13809)	179 (94.3 to 294.4)	3.03 (2.29-3.96)	3.22 (2.32-4.37)	0.06 (-0.26 to 0.5)
Occupational exposure to diesel engine exhaust	43884 (31291-57907)	127417 (92744-170193)	190.3 (107.9 to 313.1)	36.47 (26.01-48.13)	40.36 (29.38-53.91)	0.11 (-0.21 to 0.57)
Occupational exposure to nickel	22101 (4462-50543)	53200 (11065-123474)	140.7 (69 to 237.7)	18.37 (3.71-42.01)	16.85 (3.51-39.11)	-0.08 (-0.36 to 0.29)
Occupational exposure to polycyclic aromatic hydrocarbons	12723 (8783-17092)	35165 (24148-48804)	176.4 (94.7 to 290.9)	10.57 (7.3-14.21)	11.14 (7.65-15.46)	0.05 (-0.26 to 0.49)
Occupational exposure to silica	114187 (51492-184253)	277535 (121372-453653)	143.1 (71.3 to 240.7)	94.9 (42.8-153.14)	87.91 (38.45-143.7)	-0.07 (-0.35 to 0.3)
Residential radon	122988 (22311-259016)	354507 (65690-758704)	188.2 (104.3 to 298.5)	102.22 (18.54-215.28)	112.29 (20.81-240.33)	0.1 (-0.22 to 0.52)
Secondhand smoke	200864 (114960-311402)	588279 (333552-919162)	192.9 (101.3 to 337)	166.94 (95.55-258.82)	186.34 (105.66-291.15)	0.12 (-0.23 to 0.67)
Smoking	2696387 (2205582-3230714)	7948174 (6222560-9896890)	194.8 (111 to 300.6)	2241.05 (1833.13-2685.15)	2517.66 (1971.06-3134.94)	0.12 (-0.2 to 0.53)

Note: Estimates are for populations aged 55 years and above among men in China. Rates are reported per 100000 person-years. Cancer types and risks are listed alphabetically. DALY=disability-adjusted life-year, UI=uncertainty interval.

Table S8 The DALYs and DALY rate in the risks for 22 cancers among women in 1990 and 2019, and percentage change in DALYs, annual rate of change in DALY rate from 1990 to 2019

Risks	DALYs in 1990 (95% UI)	DALYs in 2019 (95% UI)	Percentage change in DALYs (95% UI)	DALY rate in 1990 (95% UI)	DALY rate in 2019 (95% UI)	Annual rate of change in DALY rate (95% UI)
Bladder cancer						
High fasting plasma glucose	5860 (1037-14513)	9806 (1662-23194)	67.4 (25 to 125.5)	4.31 (0.76-10.67)	2.78 (0.47-6.58)	-0.35 (-0.52 to -0.13)
Smoking	13736 (8280-19353)	17326 (10620-25194)	26.1 (-13.5 to 85.2)	10.1 (6.09-14.22)	4.91 (3.01-7.14)	-0.51 (-0.67 to -0.29)
Breast cancer						
Alcohol use	12246 (8470-16684)	37690 (25098-51911)	207.8 (103.5 to 381.2)	9 (6.22-12.26)	10.69 (7.12-14.72)	0.19 (-0.21 to 0.86)
Diet high in red meat	17642 (6066-26732)	72606 (32899-105424)	311.6 (182.3 to 627.9)	12.97 (4.46-19.65)	20.59 (9.33-29.9)	0.59 (0.09 to 1.81)
High body-mass index	45198 (8115-109612)	251768 (71756-507947)	457 (281.1 to 980.7)	33.22 (5.96-80.56)	71.4 (20.35-144.05)	1.15 (0.47 to 3.17)
High fasting plasma glucose	35926 (6796-82776)	105013 (19529-245563)	192.3 (128.8 to 282.6)	26.4 (4.99-60.84)	29.78 (5.54-69.64)	0.13 (-0.12 to 0.48)
Low physical activity	5676 (2664-10469)	14486 (7094-26678)	155.2 (91.1 to 243.5)	4.17 (1.96-7.69)	4.11 (2.01-7.57)	-0.02 (-0.26 to 0.33)
Secondhand smoke	24421 (5783-42570)	57265 (14064-101864)	134.5 (79.6 to 209.9)	17.95 (4.25-31.29)	16.24 (3.99-28.89)	-0.1 (-0.31 to 0.2)
Smoking	6482 (3846-10226)	21890 (14521-31417)	237.7 (121.4 to 426.6)	4.76 (2.83-7.52)	6.21 (4.12-8.91)	0.3 (-0.15 to 1.03)
Cervical cancer						

Smoking	58307 (25478-112250)	94995 (36983-178480)	62.9 (-30.4 to 160.1)	42.85 (18.72-82.5)	26.94 (10.49-50.61)	-0.37 (-0.73 to 0)
Unsafe sex	384588 (303304-616502)	804412 (461315-1026731)	109.2 (-9.7 to 201.8)	282.65 (222.91-453.09)	228.12 (130.82-291.17)	-0.19 (-0.65 to 0.16)
Colon and rectum cancer						
Alcohol use	9633 (6104-13856)	32560 (20341-48407)	238 (116.5 to 430.2)	7.08 (4.49-10.18)	9.23 (5.77-13.73)	0.3 (-0.16 to 1.05)
Diet high in processed meat	4447 (1842-7577)	21071 (3785-39718)	373.8 (76.7 to 604.5)	3.27 (1.35-5.57)	5.98 (1.07-11.26)	0.83 (-0.32 to 1.72)
Diet high in red meat	20061 (2485-49370)	95722 (25060-189500)	377.2 (201.3 to 1615.5)	14.74 (1.83-36.28)	27.15 (7.11-53.74)	0.84 (0.16 to 5.62)
Diet low in calcium	120042 (89928-154963)	230631 (145366-338790)	92.1 (40.7 to 159.5)	88.22 (66.09-113.89)	65.4 (41.22-96.08)	-0.26 (-0.46 to 0)
Diet low in fiber	13498 (4824-27058)	14991 (5716-36734)	11.1 (-37.1 to 84)	9.92 (3.55-19.89)	4.25 (1.62-10.42)	-0.57 (-0.76 to -0.29)
Diet low in milk	115537 (77358-155871)	309776 (201432-419041)	168.1 (111.3 to 246.9)	84.91 (56.85-114.56)	87.85 (57.12-118.84)	0.03 (-0.18 to 0.34)
Diet low in whole grains	92154 (34163-125925)	253611 (94050-354702)	175.2 (114.1 to 255.9)	67.73 (25.11-92.55)	71.92 (26.67-100.59)	0.06 (-0.17 to 0.37)
High body-mass index	8267 (1831-21529)	46479 (16035-100750)	462.3 (297.7 to 955.4)	6.08 (1.35-15.82)	13.18 (4.55-28.57)	1.17 (0.53 to 3.07)
High fasting plasma glucose	39887 (7361-96438)	115159 (20783-275751)	188.7 (126.7 to 274.1)	29.31 (5.41-70.88)	32.66 (5.89-78.2)	0.11 (-0.13 to 0.44)
Low physical activity	28485 (7496-55781)	74070 (20115-149763)	160 (91.6 to 257.4)	20.93 (5.51-41)	21.01 (5.7-42.47)	0 (-0.26 to 0.38)

Smoking	14337 (5822-23320)	49544 (25306-75593)	245.6 (131.6 to 436.9)	10.54 (4.28-17.14)	14.05 (7.18-21.44)	0.33 (-0.11 to 1.07)
Esophageal cancer						
Alcohol use	46714 (23965-74697)	53375 (28557-83085)	14.3 (-26.7 to 90.7)	34.33 (17.61-54.9)	15.14 (8.1-23.56)	-0.56 (-0.72 to -0.26)
Chewing tobacco	3258 (1276-6035)	2848 (1301-5421)	-12.6 (-54 to 67.4)	2.39 (0.94-4.44)	0.81 (0.37-1.54)	-0.66 (-0.82 to -0.35)
Diet low in fruits	200682 (61444-376873)	70558 (9637-192153)	-64.8 (-90.6 to -30.3)	147.49 (45.16-276.98)	20.01 (2.73-54.49)	-0.86 (-0.96 to -0.73)
Diet low in vegetables	73780 (3702-164171)	3781 (1780-8758)	-94.9 (-97.3 to -43.5)	54.22 (2.72-120.65)	1.07 (0.5-2.48)	-0.98 (-0.99 to -0.78)
High body-mass index	84085 (3491-264583)	151147 (7650-377110)	79.8 (22.7 to 268.5)	61.8 (2.57-194.45)	42.86 (2.17-106.94)	-0.31 (-0.53 to 0.42)
Smoking	119549 (66781-163972)	100317 (68281-136958)	-16.1 (-43.6 to 31.9)	87.86 (49.08-120.51)	28.45 (19.36-38.84)	-0.68 (-0.78 to -0.49)
Gallbladder and biliary tract cancer						
High body-mass index	8484 (2015-21546)	43353 (16688-84713)	411 (107.3 to 1017.7)	6.24 (1.48-15.84)	12.29 (4.73-24.02)	0.97 (-0.2 to 3.31)
Kidney cancer						
High body-mass index	2561 (650-5701)	17222 (7325-31363)	572.5 (365.7 to 1219)	1.88 (0.48-4.19)	4.88 (2.08-8.89)	1.59 (0.8 to 4.09)
Occupational exposure to trichloroethylene	30 (6-58)	116 (24-216)	289.3 (194 to 420)	0.02 (0-0.04)	0.03 (0.01-0.06)	0.5 (0.13 to 1.01)
Smoking	1035 (510-1723)	4758 (2744-7095)	359.6 (209.7 to 618.9)	0.76 (0.37-1.27)	1.35 (0.78-2.01)	0.77 (0.19 to 1.77)
Larynx cancer						

Alcohol use	1449 (507-2614)	2467 (1056-4162)	70.3 (7.9 to 203.8)	1.06 (0.37-1.92)	0.7 (0.3-1.18)	-0.34 (-0.58 to 0.17)
Occupational exposure to asbestos	502 (205-1000)	642 (257-1120)	27.8 (-42.3 to 135.7)	0.37 (0.15-0.74)	0.18 (0.07-0.32)	-0.51 (-0.78 to -0.09)
Occupational exposure to sulfuric acid	1903 (753-3539)	2563 (1058-4954)	34.7 (2.9 to 78.5)	1.4 (0.55-2.6)	0.73 (0.3-1.4)	-0.48 (-0.6 to -0.31)
Smoking	14957 (10429-19654)	17728 (11692-24381)	18.5 (-14.8 to 66.2)	10.99 (7.66-14.44)	5.03 (3.32-6.91)	-0.54 (-0.67 to -0.36)
Leukemia						
High body-mass index	5855 (1095-15482)	21390 (6365-45642)	265.3 (142.9 to 643)	4.3 (0.8-11.38)	6.07 (1.81-12.94)	0.41 (-0.06 to 1.87)
Occupational exposure to benzene	472 (138-811)	1135 (307-2017)	140.5 (61.6 to 230.6)	0.35 (0.1-0.6)	0.32 (0.09-0.57)	-0.07 (-0.38 to 0.28)
Occupational exposure to formaldehyde	240 (148-357)	500 (306-755)	108.3 (39.5 to 198.7)	0.18 (0.11-0.26)	0.14 (0.09-0.21)	-0.2 (-0.46 to 0.15)
Smoking	9569 (3479-18881)	20455 (9210-37230)	113.8 (29.8 to 265.6)	7.03 (2.56-13.88)	5.8 (2.61-10.56)	-0.18 (-0.5 to 0.41)
Lip and oral cavity cancer						
Alcohol use	3505 (2080-5193)	8713 (5341-13251)	148.6 (56.8 to 295.2)	2.58 (1.53-3.82)	2.47 (1.51-3.76)	-0.04 (-0.39 to 0.52)
Chewing tobacco	548 (272-982)	1029 (529-1781)	87.7 (3.2 to 234.9)	0.4 (0.2-0.72)	0.29 (0.15-0.51)	-0.28 (-0.6 to 0.29)
Smoking	3569 (2163-5365)	8470 (5732-11808)	137.3 (61.8 to 254.7)	2.62 (1.59-3.94)	2.4 (1.63-3.35)	-0.08 (-0.38 to 0.37)
Liver cancer						
Alcohol use	102115	90505	-11.4	75.05	25.67	-0.66

	(69886-144015)	(61938-124562)	(-36.3 to 22.1)	(51.36-105.84)	(17.56-35.32)	(-0.75 to -0.53)
Drug use	201174	195955	-2.6	147.85	55.57	-0.62
	(118494-306314)	(129599-275936)	(-34.3 to 48.2)	(87.09-225.12)	(36.75-78.25)	(-0.75 to -0.43)
High body-mass index	39829	62438	56.8	29.27	17.71	-0.4
	(4207-117330)	(9252-154761)	(3.1 to 223.4)	(3.09-86.23)	(2.62-43.89)	(-0.6 to 0.25)
High fasting plasma glucose	11363	10165	-10.5	8.35	2.88	-0.65
	(1989-27673)	(1897-24237)	(-35.3 to 24.1)	(1.46-20.34)	(0.54-6.87)	(-0.75 to -0.52)
Smoking	28565	29088	1.8	20.99	8.25	-0.61
	(10394-52062)	(12551-47282)	(-36.8 to 73.5)	(7.64-38.26)	(3.56-13.41)	(-0.76 to -0.33)
Mesothelioma						
Occupational exposure to asbestos	8672	16179	86.6	6.37	4.59	-0.28
	(5674-14415)	(9492-21486)	(-10.9 to 223.6)	(4.17-10.59)	(2.69-6.09)	(-0.66 to 0.25)
Multiple myeloma						
High body-mass index	1098	4809	337.9	0.81	1.36	0.69
	(189-2997)	(1260-11097)	(141.6 to 797.4)	(0.14-2.2)	(0.36-3.15)	(-0.07 to 2.46)
Nasopharynx cancer						
Alcohol use	12761	14925	17	9.38	4.23	-0.55
	(6842-20026)	(8593-22416)	(-26.1 to 87.1)	(5.03-14.72)	(2.44-6.36)	(-0.71 to -0.28)
Occupational exposure to formaldehyde	440	526	19.6	0.32	0.15	-0.54
	(170-835)	(214-955)	(-14.2 to 77.8)	(0.12-0.61)	(0.06-0.27)	(-0.67 to -0.31)
Smoking	4829	5358	11	3.55	1.52	-0.57
	(2574-7857)	(3042-8253)	(-29.1 to 80.3)	(1.89-5.77)	(0.86-2.34)	(-0.73 to -0.3)
Non-Hodgkin lymphoma						
High body-mass index	1376	8595	524.8	1.01	2.44	1.41
	(178-3922)	(1308-20602)	(333 to 1104.1)	(0.13-2.88)	(0.37-5.84)	(0.67 to 3.65)
Other pharynx cancer						

Alcohol use	1075 (596-1634)	1807 (1042-2729)	68.1 (5.3 to 174.9)	0.79 (0.44-1.2)	0.51 (0.3-0.77)	-0.35 (-0.59 to 0.06)
Smoking	1603 (1039-2343)	2662 (1885-3640)	66 (11.7 to 156.3)	1.18 (0.76-1.72)	0.75 (0.53-1.03)	-0.36 (-0.57 to -0.01)
Ovarian cancer						
High body-mass index	1081 (-27-3414)	9968 (-234-26312)	821.8 (381 to 1828.6)	0.79 (-0.02-2.51)	2.83 (-0.07-7.46)	2.56 (0.86 to 6.44)
High fasting plasma glucose	7168 (1271-19123)	33244 (5664-83014)	363.8 (138.3 to 582.1)	5.27 (0.93-14.05)	9.43 (1.61-23.54)	0.79 (-0.08 to 1.63)
Occupational exposure to asbestos	2067 (855-4785)	7236 (2514-13153)	250.1 (7.5 to 619.5)	1.52 (0.63-3.52)	2.05 (0.71-3.73)	0.35 (-0.59 to 1.78)
Pancreatic cancer						
High body-mass index	4368 (850-10629)	37794 (10790-80752)	765.2 (499.8 to 1545.5)	3.21 (0.62-7.81)	10.72 (3.06-22.9)	2.34 (1.31 to 5.35)
High fasting plasma glucose	12969 (2040-31223)	57573 (8932-140458)	343.9 (243.7 to 471.5)	9.53 (1.5-22.95)	16.33 (2.53-39.83)	0.71 (0.33 to 1.21)
Smoking	13135 (8676-18774)	69574 (49681-92557)	429.7 (260.4 to 706.4)	9.65 (6.38-13.8)	19.73 (14.09-26.25)	1.04 (0.39 to 2.11)
Stomach cancer						
Diet high in sodium	161143 (3681-602200)	176037 (3905-682994)	9.2 (-18.1 to 39.6)	118.43 (2.71-442.58)	49.92 (1.11-193.69)	-0.58 (-0.68 to -0.46)
Smoking	47672 (28311-71711)	67339 (45486-94007)	41.3 (-6.3 to 113.9)	35.04 (20.81-52.7)	19.1 (12.9-26.66)	-0.45 (-0.64 to -0.17)
Thyroid cancer						
High body-mass index	991 (232-2388)	3504 (1381-7012)	253.5 (138.8 to 592.9)	0.73 (0.17-1.75)	0.99 (0.39-1.99)	0.36 (-0.08 to 1.67)

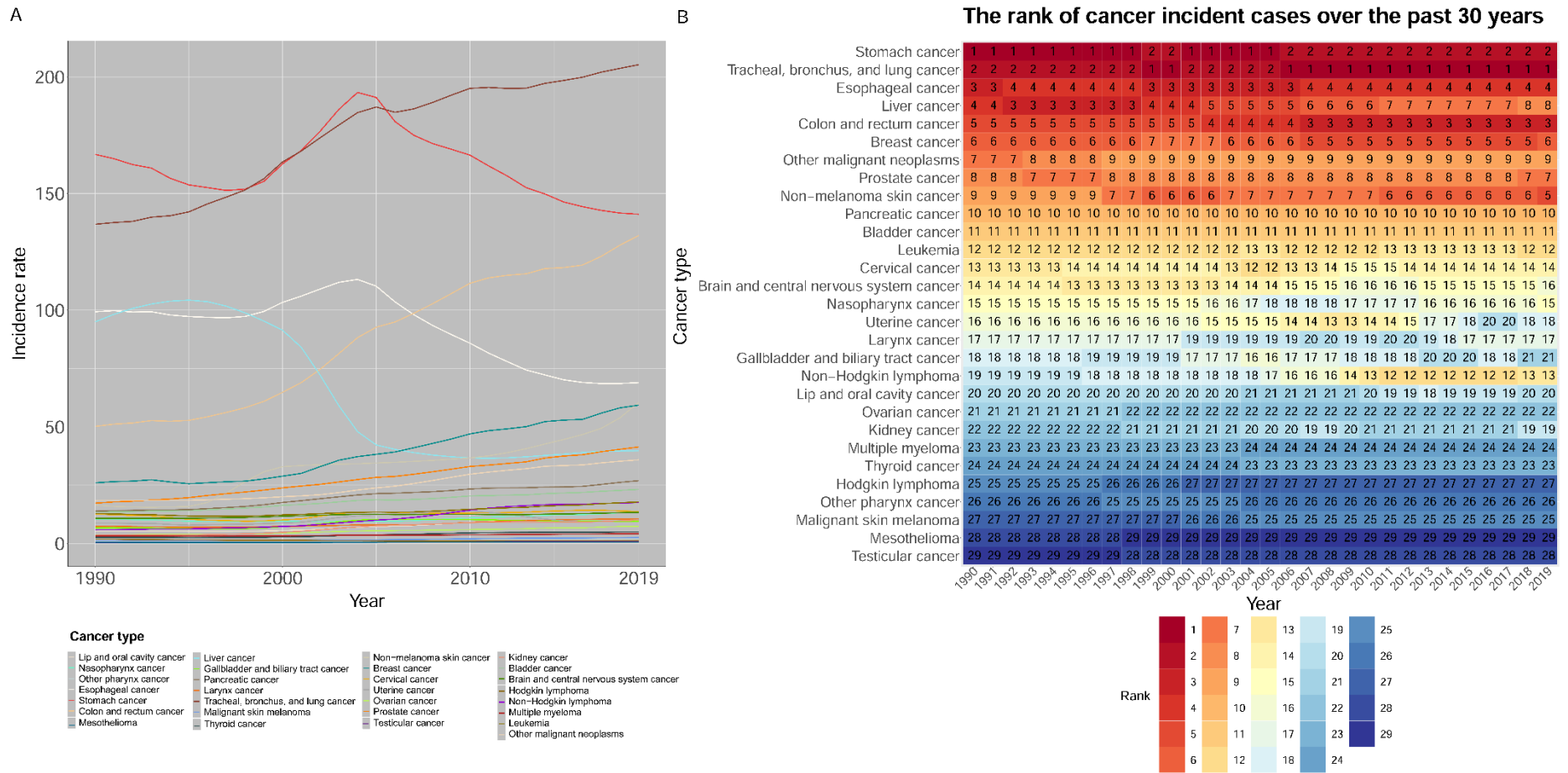
Tracheal, bronchus, and lung cancer

Ambient particulate matter pollution	123445 (56467-217452)	866752 (611231-1168817)	602.1 (292.4 to 1383.3)	90.72 (41.5-159.81)	245.8 (173.34-331.46)	1.71 (0.51 to 4.72)
Diet low in fruits	71235 (23790-112519)	134380 (37082-211423)	88.6 (15.4 to 180.5)	52.35 (17.48-82.69)	38.11 (10.52-59.96)	-0.27 (-0.55 to 0.08)
High fasting plasma glucose	88422 (17042-221322)	278294 (51642-686327)	214.7 (143.4 to 312)	64.98 (12.52-162.66)	78.92 (14.64-194.63)	0.21 (-0.06 to 0.59)
Household air pollution from solid fuels	331155 (215263-470664)	244149 (115569-425021)	-26.3 (-61 to 24)	243.38 (158.2-345.91)	69.24 (32.77-120.53)	-0.72 (-0.85 to -0.52)
Occupational exposure to arsenic	8269 (2991-14033)	25632 (9155-44118)	210 (133.1 to 322.6)	6.08 (2.2-10.31)	7.27 (2.6-12.51)	0.2 (-0.1 to 0.63)
Occupational exposure to asbestos	29838 (16235-53298)	80780 (40922-126625)	170.7 (22.6 to 385.9)	21.93 (11.93-39.17)	22.91 (11.61-35.91)	0.04 (-0.53 to 0.87)
Occupational exposure to beryllium	355 (239-481)	1093 (738-1499)	208.2 (130.6 to 317.9)	0.26 (0.18-0.35)	0.31 (0.21-0.42)	0.19 (-0.11 to 0.61)
Occupational exposure to cadmium	802 (553-1087)	2516 (1729-3515)	213.7 (132.8 to 332)	0.59 (0.41-0.8)	0.71 (0.49-1)	0.21 (-0.1 to 0.67)
Occupational exposure to chromium	1482 (1122-1902)	4903 (3651-6512)	230.9 (145.6 to 348.6)	1.09 (0.82-1.4)	1.39 (1.04-1.85)	0.28 (-0.05 to 0.73)
Occupational exposure to diesel engine exhaust	13650 (10009-17704)	47894 (35253-63046)	250.9 (161.2 to 375.1)	10.03 (7.36-13.01)	13.58 (10-17.88)	0.35 (0.01 to 0.83)
Occupational exposure to nickel	8713 (1903-19243)	25087 (4808-56305)	187.9 (115.8 to 289.6)	6.4 (1.4-14.14)	7.11 (1.36-15.97)	0.11 (-0.17 to 0.5)

Occupational exposure to polycyclic aromatic hydrocarbons	5115 (3594-6842)	16807 (11924-23126)	228.6 (145.8 to 353.1)	3.76 (2.64-5.03)	4.77 (3.38-6.56)	0.27 (-0.05 to 0.75)
Occupational exposure to silica	41574 (18930-65591)	110057 (45819-180259)	164.7 (97.1 to 256.6)	30.55 (13.91-48.21)	31.21 (12.99-51.12)	0.02 (-0.24 to 0.38)
Residential radon	50695 (9148-107729)	153562 (25780-325826)	202.9 (133.5 to 297.3)	37.26 (6.72-79.17)	43.55 (7.31-92.4)	0.17 (-0.1 to 0.53)
Secondhand smoke	166692 (96027-250025)	458641 (275227-696690)	175.1 (109.6 to 260.9)	122.51 (70.57-183.75)	130.07 (78.05-197.57)	0.06 (-0.19 to 0.39)
Smoking	264340 (194150-346156)	1029794 (813087-1296152)	289.6 (175.3 to 455.9)	194.27 (142.69-254.4)	292.04 (230.58-367.57)	0.5 (0.06 to 1.14)
Uterine cancer						
High body-mass index	20354 (5453-43134)	54702 (24465-98887)	168.8 (76.6 to 442.3)	14.96 (4.01-31.7)	15.51 (6.94-28.04)	0.04 (-0.32 to 1.09)

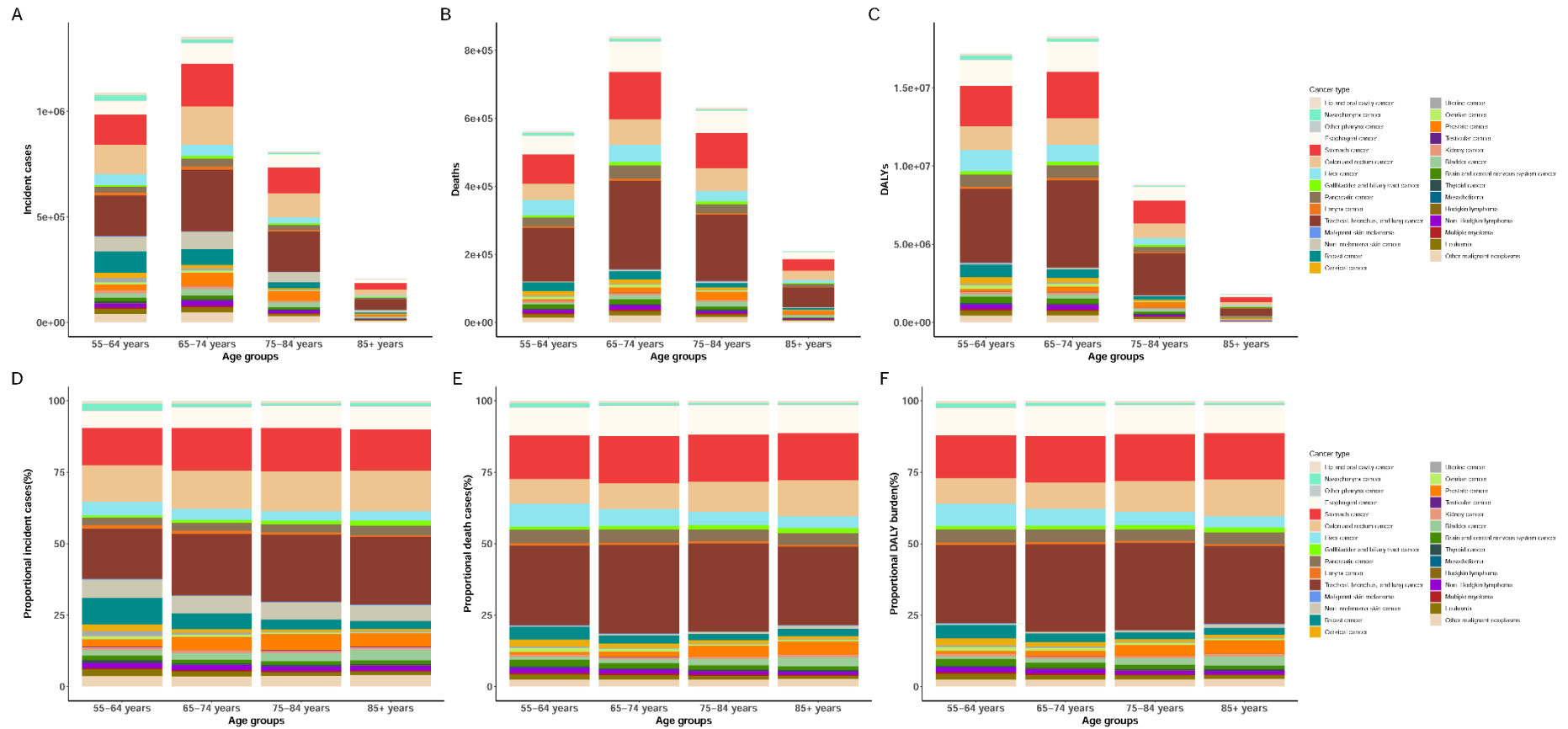
Note: Estimates are for populations aged 55 years and above among women in China. Rates are reported per 100000 person-years. Cancer types and risks are listed alphabetically. DALY=disability-adjusted life-year, UI=uncertainty interval.

Figure S1 The changing trend of incidence rate (A) and the rank of incident cases (B) for 29 cancers in China from 1990 to 2019



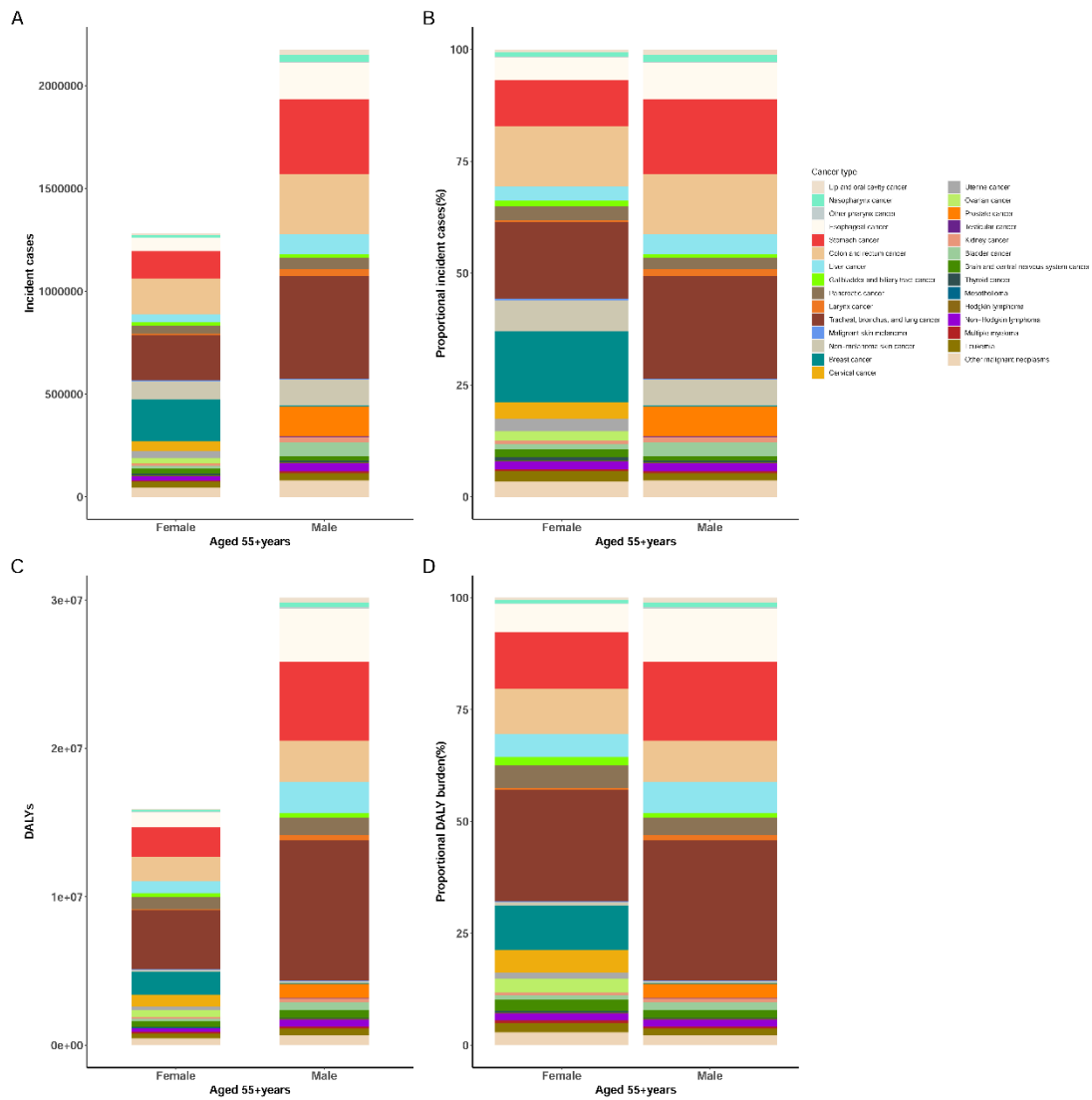
Note: Estimates are for populations aged 55 years and above, both sexes in China. Rates are reported per 100000 person-years.

Figure S2 Incident cases, deaths and DALYs (A, B, C) of 29 cancers in 4 age groups (55–64 years, 65–74 years, 75–84 years, 85+ years) and the proportional incident cases, deaths, DALYs (D, E, F) in the four age groups in China in 2019



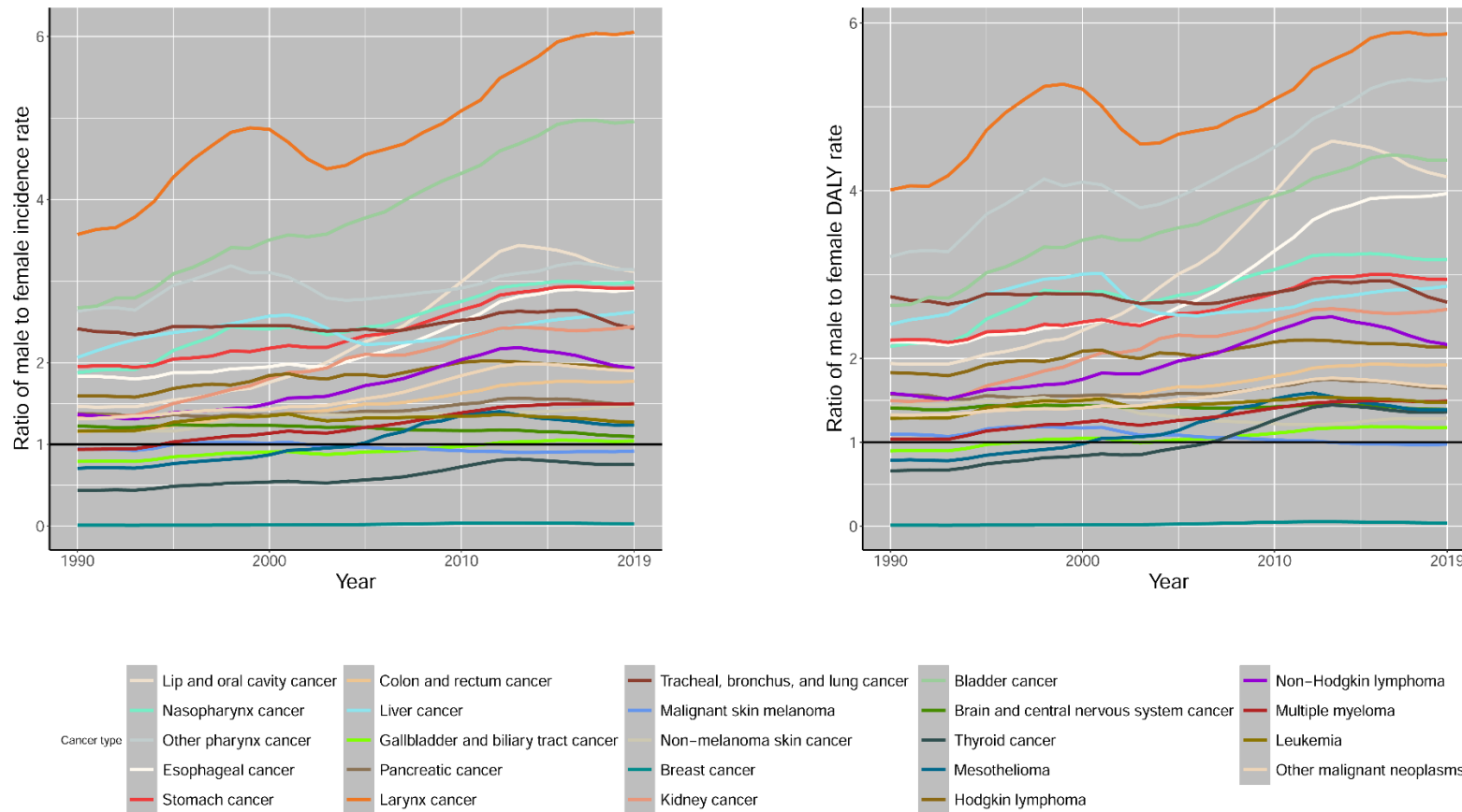
Note: Estimates are for populations aged 55 years and above, both sexes in China. DALY = disability-adjusted life-year.

Figure S3 Incident cases, DALYs (A, B) and the proportional incident cases, DALYs (C, D) of 29 cancers among men and women in China in 2019



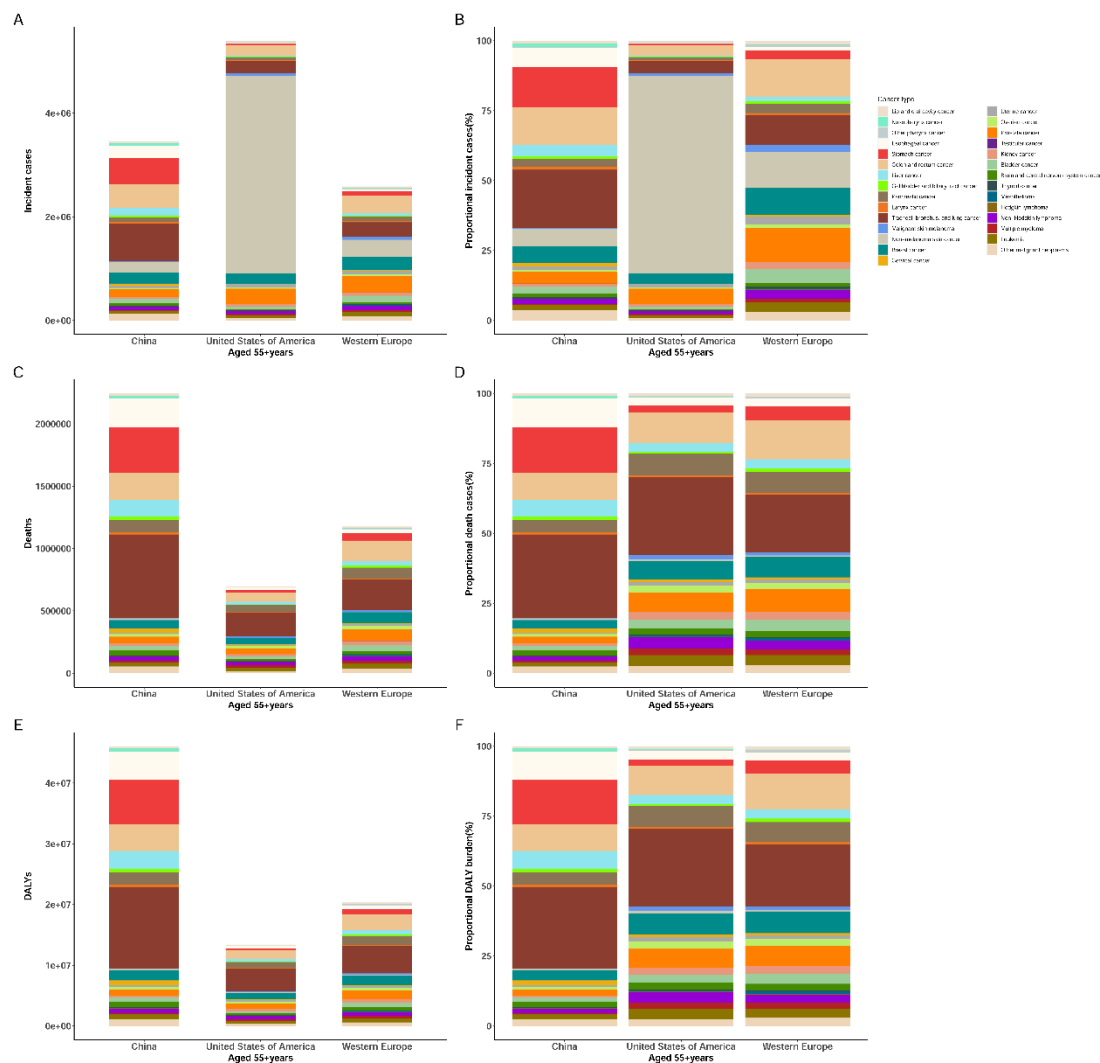
Note: Estimates are for populations aged 55 years and above among men and women in China. DALY=disability-adjusted life-year.

Figure S4 Ratio of men to women incidence rate (A) and ratio of men to women DALY rate (B) of 24 cancers (the cancers can affect both men and women) in China from 1990 to 2019



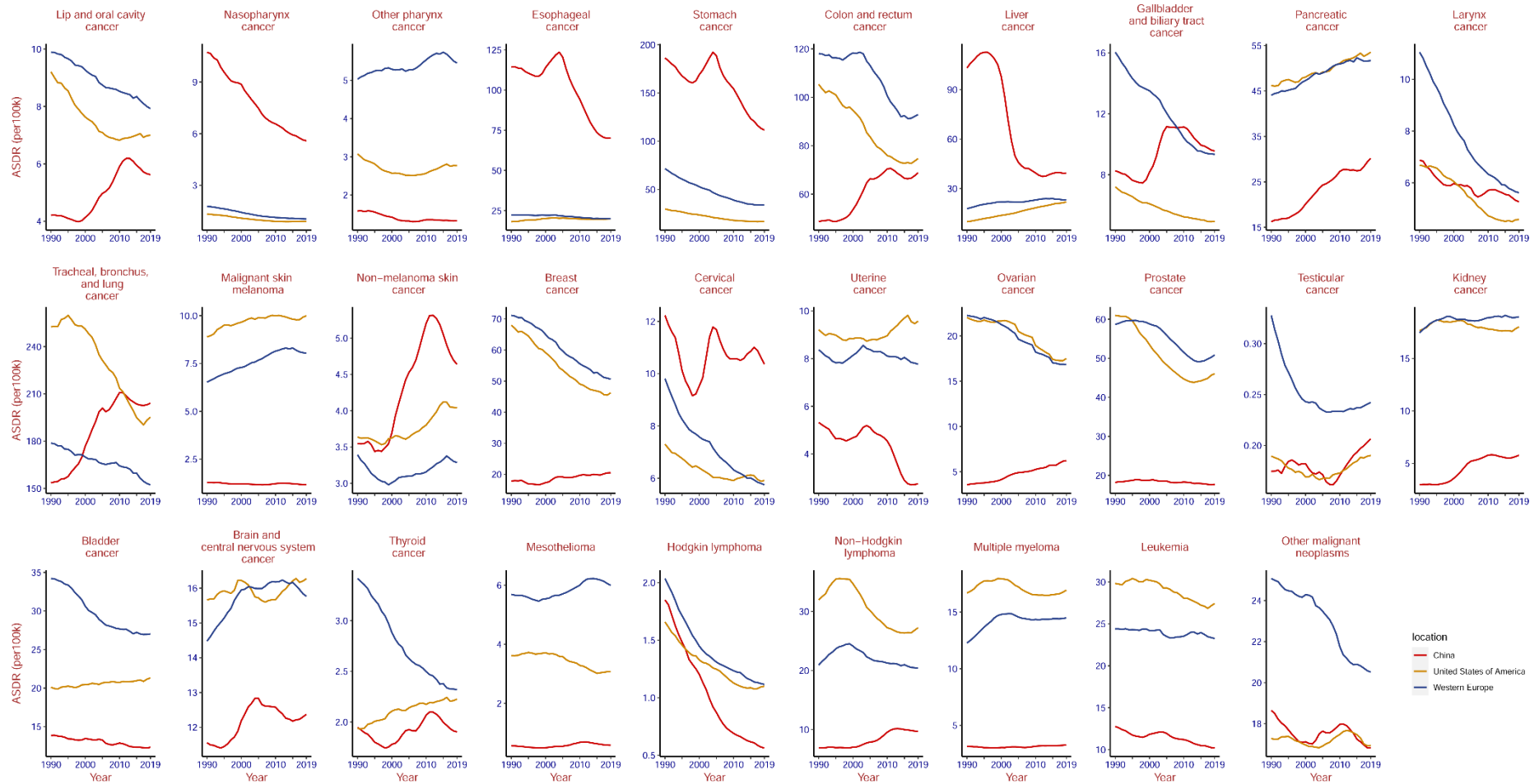
Note: Estimates are for populations aged 55 years and above. DALY=disability-adjusted life-year.

Figure S5 Incident cases (A), death cases (C), DALYs (E) and the proportional incident cases (B), proportional deaths (D), proportional DALYs (F) of 29 cancers among China, United States, Western Europe in 2019



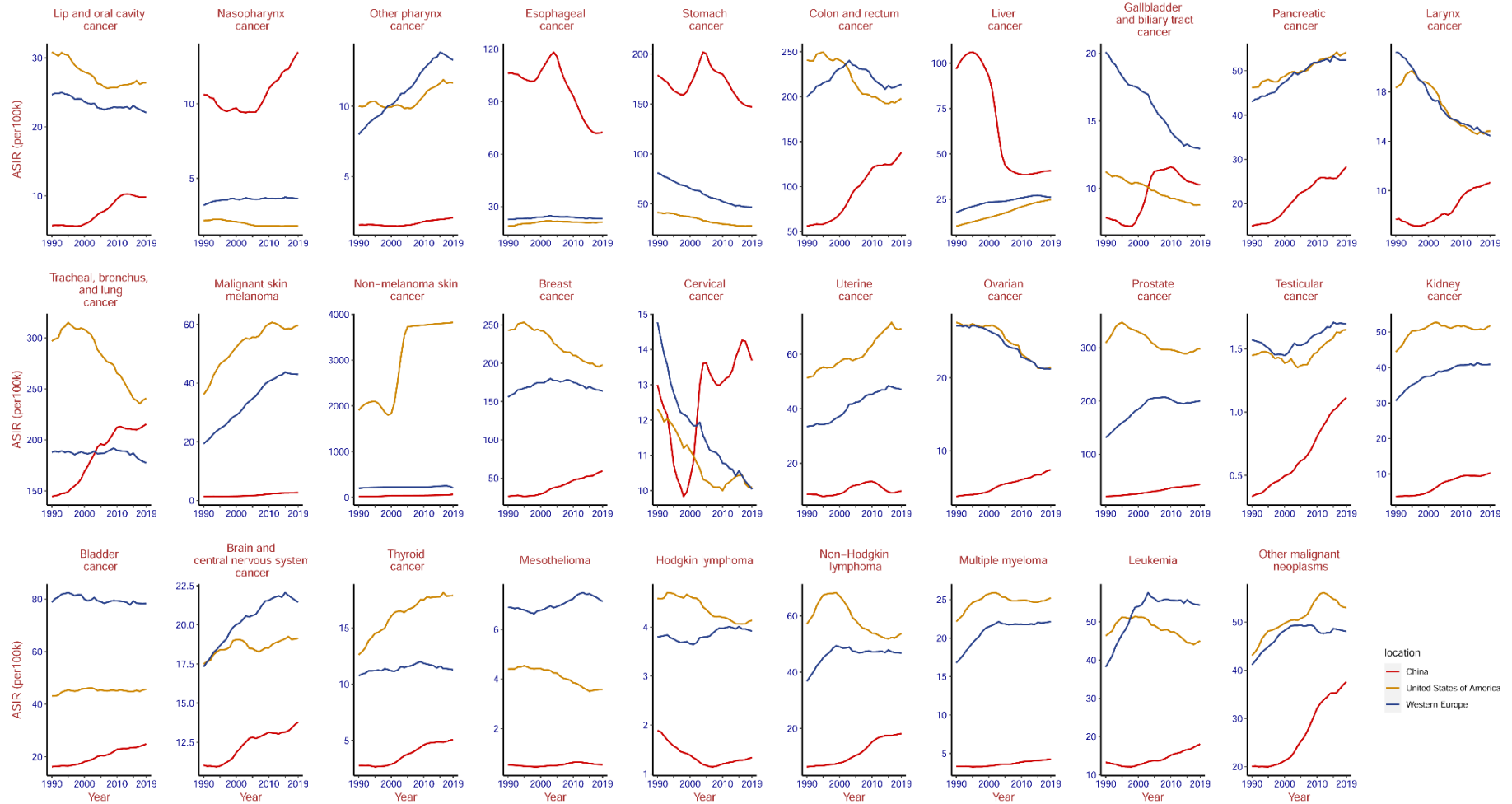
Note: Estimates are for populations aged 55 years and above. DALY=disability-adjusted life-year.

Figure S6 The change trend of ASIR in 29 cancers among China, United States, Western Europe from 1990 to 2019



Note: Estimates are for populations aged 55 years and above. Rates are reported per 100000 person-years. ASIR=age-standardized incidence rate.

Figure S7 The change trend of ASDR in 29 cancers among China, United States, Western Europe from 1990 to 2019



Note: Estimates are for populations aged 55 years and above. Rates are reported per 100000 person-years. ASDR=age-standardized death rate.