

SUPPLEMENTAL MATERIAL—ADDITIONAL FILE 1

Cost-effectiveness of Low-Dose CT Screening for Non-smokers with a First-Degree Relative History of Lung Cancer

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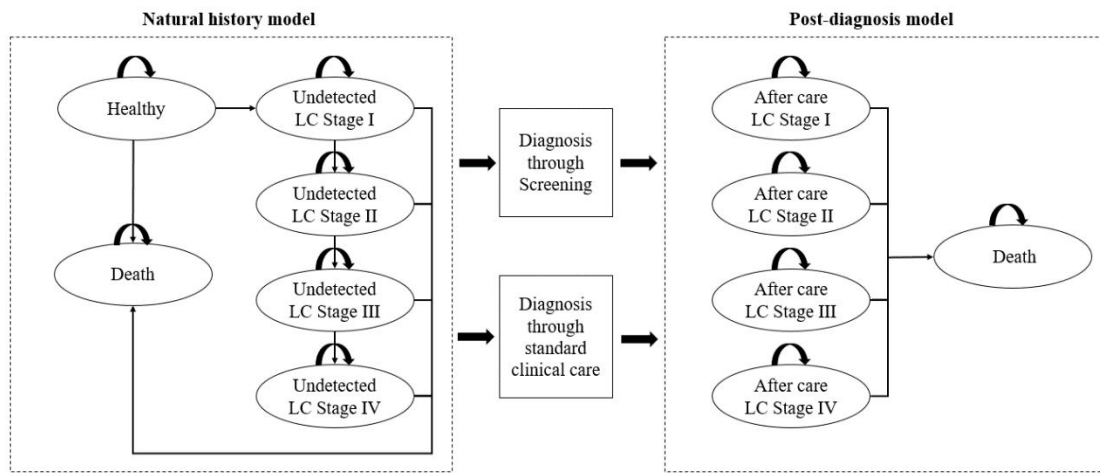


Fig. S1. Markov model of lung cancer progression

Circles represent health states, and lines with arrowhead represent transitions and their directions. Individuals in any state may suffer an age and sex-specific natural background death, but individuals with lung cancer (LC) have additional stage specific mortality from lung cancer.

Table S1. Overall lung cancer incidence rates in Chinese population (1/100,000)

Age	Male			Female		
	Base-case	Lower	Upper	Base-case	Lower	Upper
50-54 years	66.90	50.37	85.09	32.15	24.94	40.38
55-59 years	118.55	89.67	149.32	51.80	40.97	64.12
60-64 years	203.61	155.92	253.61	86.91	70.19	105.55
65-69 years	299.38	230.47	375.50	127.07	102.43	152.41
70-74 years	447.72	346.74	554.56	184.66	149.32	220.95
75-79 years	554.87	438.81	687.03	233.87	188.56	279.61

Table S2. The proportion of smokers by age and sex (%)

Age	Male			Female		
	Base-case	Lower	Upper	Base-case	Lower	Upper
50-54 years	56.9	53.3	60.5	2.1	1.4	2.8
55-59 years	58.6	55.8	61.4	2.7	1.8	3.6
60-64 years	52.9	48.4	57.3	3.1	1.8	4.4
65-69 years	48.3	45.4	51.3	3.1	1.8	4.5
70+ years	40.9	36.9	44.8	3.8	2.3	5.2

Table S3. Association between FDR history of lung cancer and lung cancer risk in eligible studies

Author (year)	Study design	Sample size	Measures of association (95%CI)
Male			
Lo et al (2013) ¹	Casecontrol	Cases, 319; Controls, 319	2.71(1.49-4.92)
Wang et al (2024) ²	Cohort	Total, 248,256; Cases, 932	1.43(1.00-2.05)
Female			
Wang et al (1996) ³	Casecontrol	Cases, 166; Controls, 166	1.89(1.31-6.41)
Xiang et al (1996) ⁴	Casecontrol	Cases, 504; Controls, 601	2.71(1.54-4.76)
Liu et al (2001) ⁵	Casecontrol	Cases, 498; Controls, 595	2.81(1.54-5.12)

Wu et al (2003) ⁶	Casecontrol	Cases, 108; Controls, 108	5.7(1.9-16.9)
Shi et al (2005) ⁷	Casecontrol	Cases, 618; Controls, 872	2.46(1.55-3.90)
Xiang et al (2005) ⁸	Casecontrol	Cases, 504; Controls, 601	3.07(1.55-6.10)
Lo et al (2013) ¹	Casecontrol	Cases, 1,221; Controls, 1,221	2.59(1.85-3.63)
Pan et al (2014) ⁹	Casecontrol	Cases, 229; Controls, 458	5.36(1.66-17.33)
Zhang et al (2022) ¹⁰	Casecontrol	Cases, 668; Controls, 626	1.57(0.95-2.64)
Guo et al (2023) ¹¹	Cohort	Total, 75,917; Cases, 119	1.60(0.91-2.83)
Wang et al (2024) ²	Cohort	Total, 547,023; Cases, 1,606	1.49(1.29-1.74)

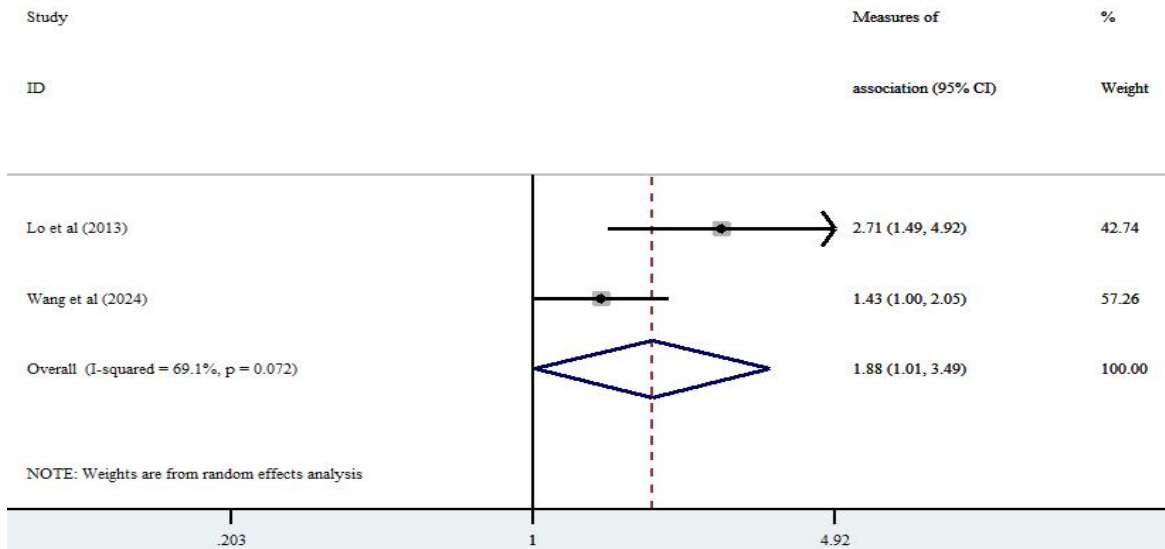


Fig. S2. Meta-analysis of OR_{FDR} in male individuals who do not smoke

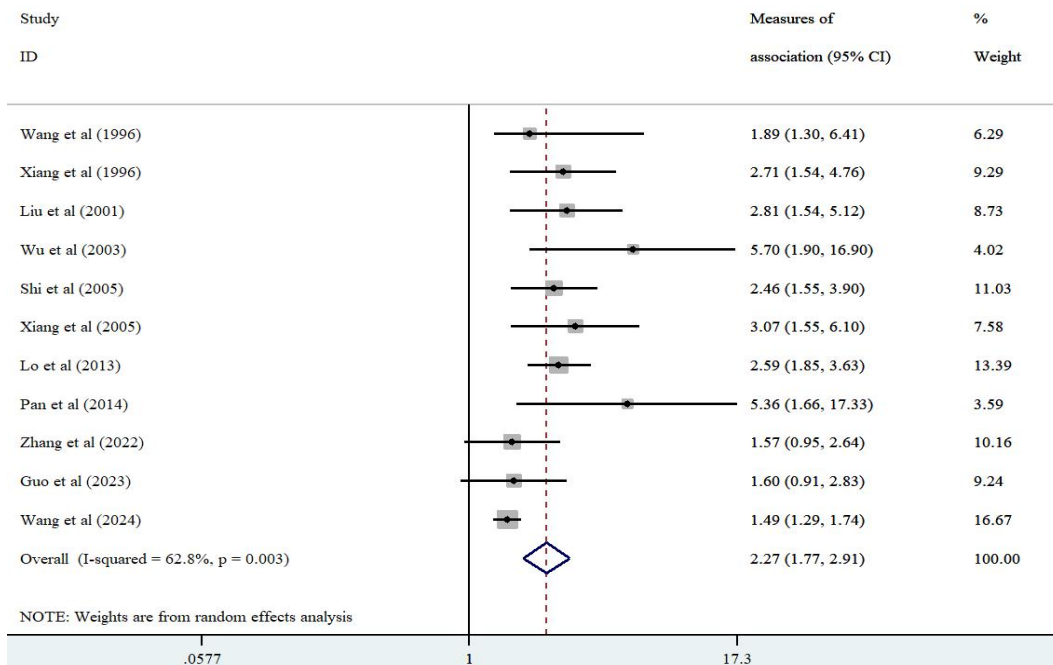


Fig. S3. Meta-analysis of OR_{FDR} in female individuals who do not smoke

Table S4. All-cause mortality rates in Chinese population (1/100,000)

Age	Male			Female		
	Base-case	Lower	Upper	Base-case	Lower	Upper

50-54 years	556.70	699.57	428.29	265.53	333.26	209.08
55-59 years	826.44	1,039.56	632.13	418.58	524.27	331.18
60-64 years	1,341.77	1,665.18	1,044.55	722.40	884.50	585.51
65-69 years	2,109.76	2,607.04	1,650.52	1,215.16	1,465.09	1,001.45
70-74 years	3,803.28	4,629.15	3,027.71	2,285.57	2,735.06	1,899.86
75-79 years	6,400.10	7,653.66	5,197.77	3,994.12	4,738.55	3,342.31

Table S5. Smoking-attributed mortality rates in Chinese population (1/100,000)

Age	Male			Female		
	Base-case	Lower	Upper	Base-case	Lower	Upper
50-54 years	182.00	234.86	137.84	10.70	17.87	6.11
55-59 years	292.84	379.75	220.95	23.25	36.12	14.00
60-64 years	494.55	632.68	372.65	40.00	62.92	24.31
65-69 years	783.87	987.27	597.60	79.77	121.31	49.19
70-74 years	1,354.06	1,693.09	1,040.76	141.80	214.96	88.58
75-79 years	2,069.35	2,593.39	1,633.47	236.22	377.28	148.64

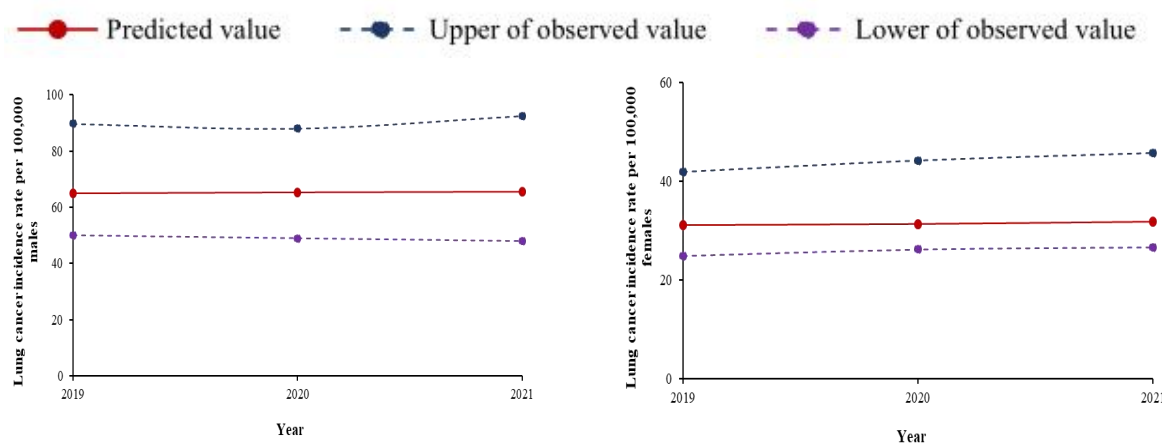


Fig. S4. Lung cancer incidence rates in 2019-2021, in China

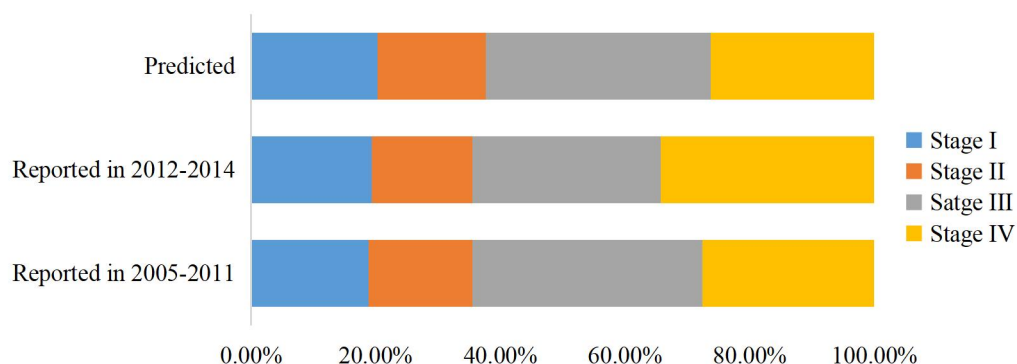


Fig. S5. Distribution of lung cancer diagnoses by stage

Table S6. Base-case cost-effectiveness results compared among different strategies in 100,000 male individuals over the lifetime

Strategy	Cost (CNY, thousand)	QALYs	Incremental Cost (CNY, thousand)		Incremental QALYs		ICER (CNY/QALY)	
			Vs No screening	Vs the strategy preceding it on the efficiency frontier	Vs No screening	Vs the strategy preceding it on the efficiency frontier	Vs No screening	Vs the strategy preceding it on the efficiency frontier
No screening	47,183	1,285,912	-	-	-	-	-	-
50_oneoff	73,971	1,285,928	26,788	26,788	16	16	Dominated	Dominated
55_oneoff	69,337	1,286,097	22,154	22,154	185	185	120,076	120,076
60_oneoff	59,379	1,286,192	12,196	12,196	280	280	43,531	43,531
65_oneoff ^a	64,035	1,286,194	16,852	16,852	282	282	59,707	59,707
65_triennial ^a	73,216	1,286,504	26,033	9,181	592	310	43,974	29,638
65_biennial	85,658	1,286,668	38,475	12,442	756	164	50,890	75,851
65_annual	124,291	1,286,956	77,108	51,075	1,044	452	73,875	113,059
60_triennial ^a	103,475	1,287,021	56,292	30,259	1,109	517	50,752	58,510
50_triennial	133,217	1,287,298	86,034	29,742	1,386	277	62,100	107,665
55_triennial	185,243	1,287,298	138,060	81,768	1,386	277	99,644	Dominated
60_biennial ^a	128,736	1,287,333	81,553	25,261	1,421	312	57,414	81,157
60_annual	193,094	1,287,598	145,911	64,358	1,686	265	86,534	242,186
55_biennial ^a	167,456	1,287,659	120,273	38,720	1,747	326	68,832	118,438
50_biennial	243,200	1,287,676	196,017	75,744	1,764	17	111,154	Dominated
50_annual	411,749	1,287,717	364,566	244,293	1,805	58	201,990	Dominated
55_annual ^a	287,259	1,287,966	240,076	119,803	2,054	307	116,905	Dominated

a: These strategies comprised the cost-effectiveness efficiency frontier.

ICER, incremental cost-effectiveness ratios; QALY, quality-adjusted life years.

Table S7. Base-case cost-effectiveness results compared among different strategies in 100,000 female individuals over the lifetime

Strategy	Cost (CNY, thousand)	QALYs	Incremental Cost (CNY, thousand)		Incremental QALYs		ICER (CNY/QALY)	
			Vs No screening	Vs the strategy preceding it on the efficiency frontier	Vs No screening	Vs the strategy preceding it on the efficiency frontier	Vs No screening	Vs the strategy preceding it on the efficiency frontier
No screening	46,701	1,412,020	-	-	-	-	-	-
50_oneoff	73,934	1,412,028	27,233	27,233	8	8	Dominated	Dominated
55_oneoff	69,904	1,412,201	23,203	23,203	181	181	128,559	128,559
60_oneoff	65,131	1,412,300	18,430	18,430	280	280	66,015	66,015
65_oneoff	60,816	1,412,308	14,115	14,115	288	288	49,152	49,152
65_triennial ^a	78,601	1,412,620	31,900	17,785	600	312	53,243	57,010
65_biennial ^a	94,860	1,412,773	48,159	16,259	753	153	63,947	105,601
65_annual	142,943	1,413,020	96,242	64,342	1,000	400	96,243	160,513
60_triennial ^a	112,209	1,413,131	65,508	33,608	1,111	511	58,973	65,683
50_triennial	197,871	1,413,377	151,170	85,662	1,357	246	111,466	Dominated
55_triennial	144,840	1,413,397	98,139	32,631	1,377	266	71,289	122,750
60_biennial ^a	143,029	1,413,426	96,328	30,820	1,406	295	68,527	104,520
60_annual	220,138	1,413,623	173,437	77,109	1,603	197	108,191	Dominated
50_annual	447,828	1,413,638	401,127	304,799	1,618	212	248,005	Dominated
50_biennial	261,754	1,413,725	215,053	118,725	1,705	299	126,140	Dominated
55_biennial ^a	184,279	1,413,739	137,578	41,250	1,719	313	80,056	131,855
55_annual ^a	320,510	1,413,943	273,809	136,231	1,923	204	142,432	Dominated

a: These strategies comprised the cost-effectiveness efficiency frontier.

ICER, incremental cost-effectiveness ratios; QALY, quality-adjusted life years.

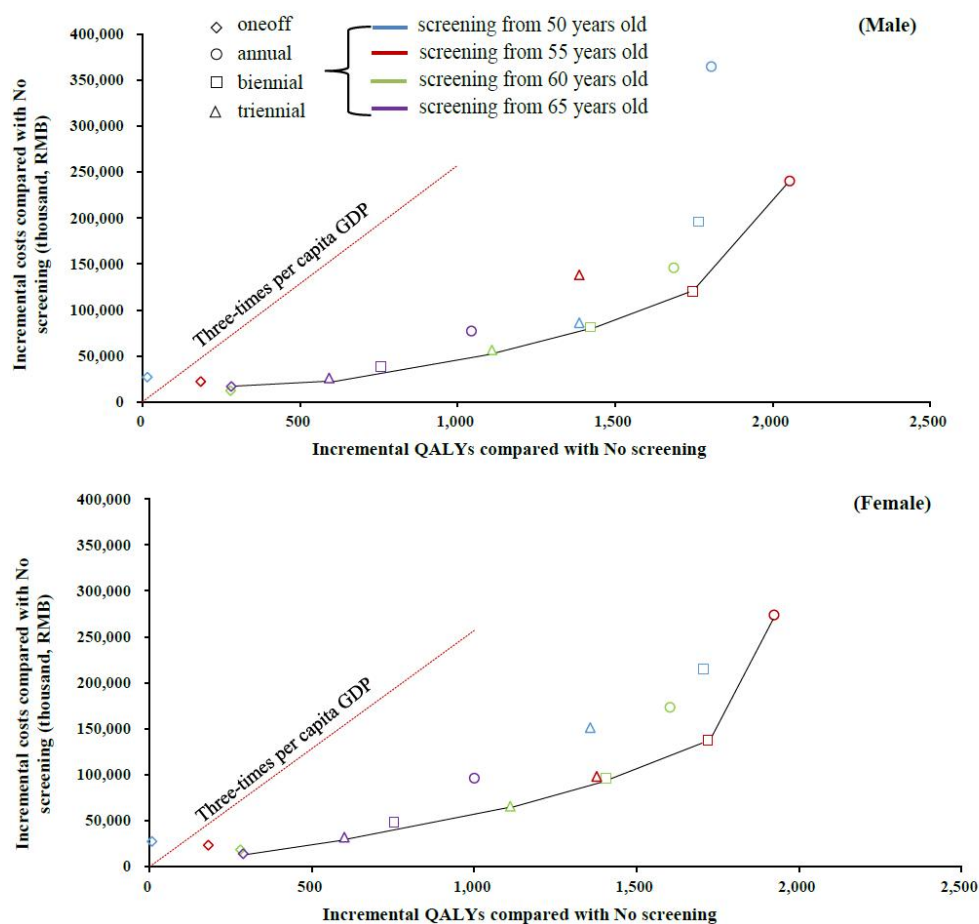


Fig. S6. Cost-effectiveness frontier for all 16 screening strategies, by sex. Incremental QALYs and incremental costs of intervention strategies are obtained for 100,000 individuals.

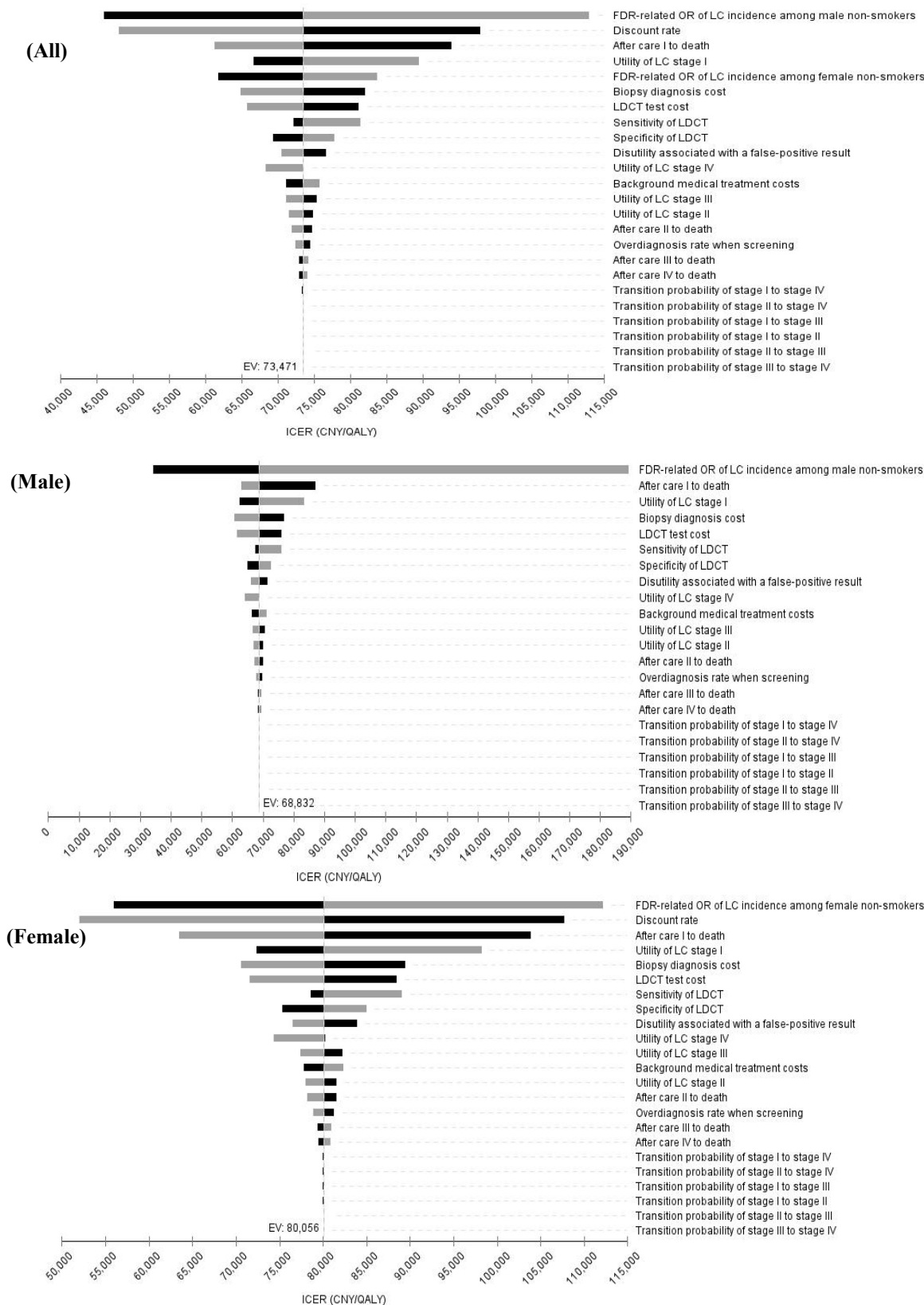


Fig. S7. Univariate sensitivity analyses of the ICER of 55-biennial strategy vs No screening for lung cancer. FDR, first-degree relative; OR, odds ratio; LDCT, Low-Dose Computed Tomography; LC, lung cancer. ICER, incremental cost-effectiveness ratios; QALY, quality-adjusted life years.

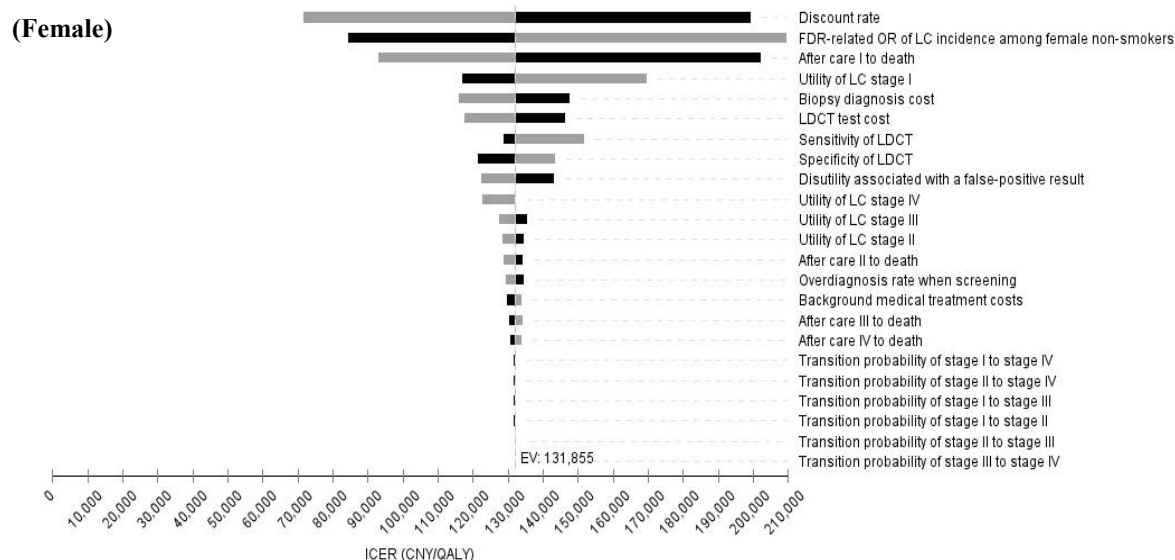
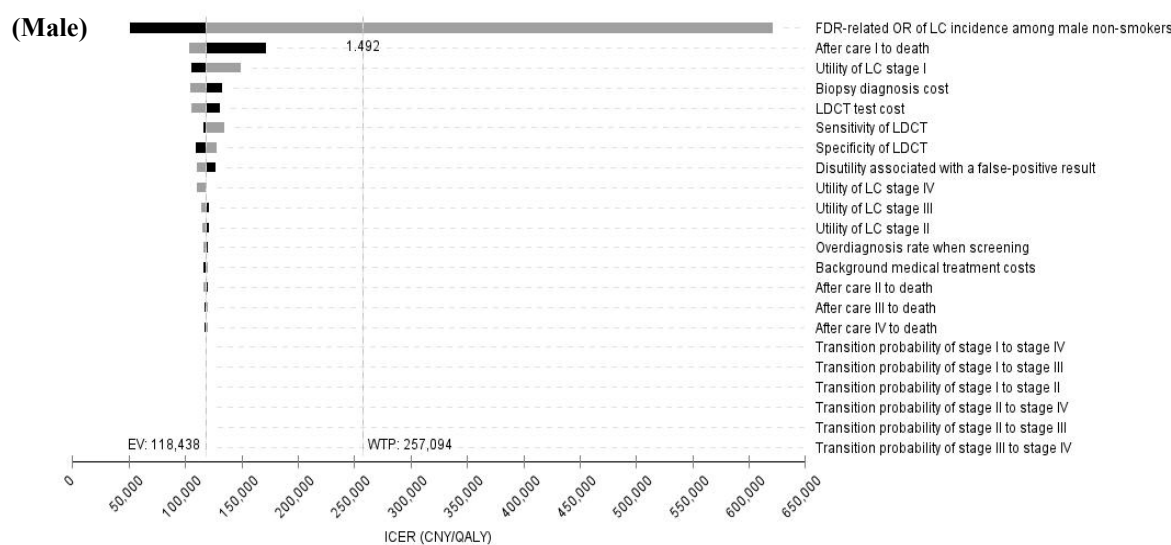
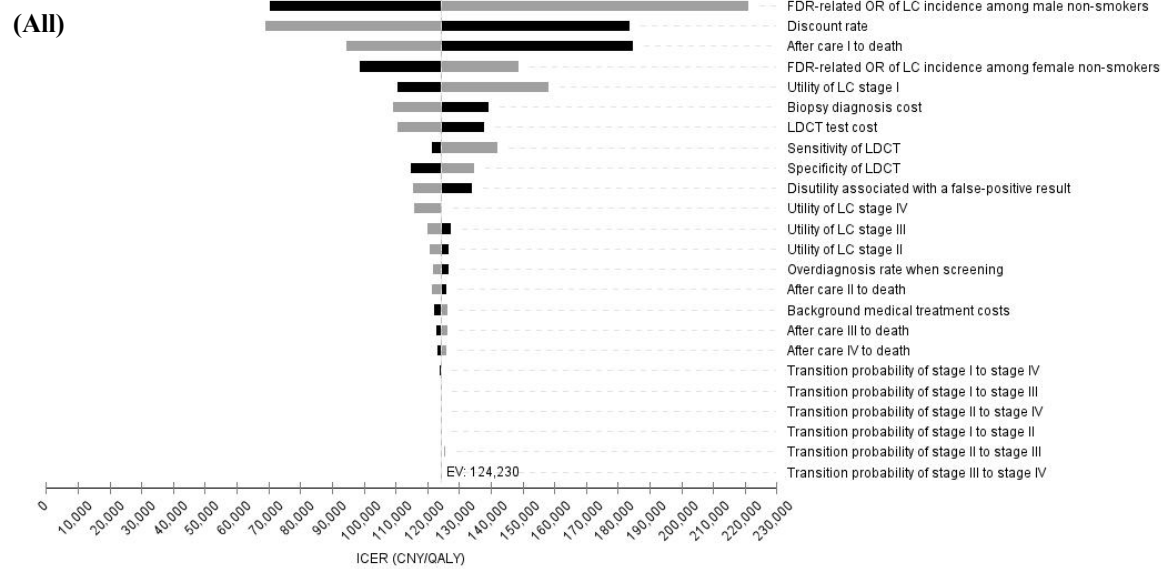


Fig. S8. Univariate sensitivity analyses of the ICER of 55_biennial strategy vs the strategy preceding it on the efficiency frontier (60_biennial) for lung cancer. FDR, first-degree relative; OR, odds ratio; LDCT, Low-Dose Computed Tomography; LC, lung cancer. ICER, incremental cost-effectiveness ratios; QALY, quality-adjusted life years.

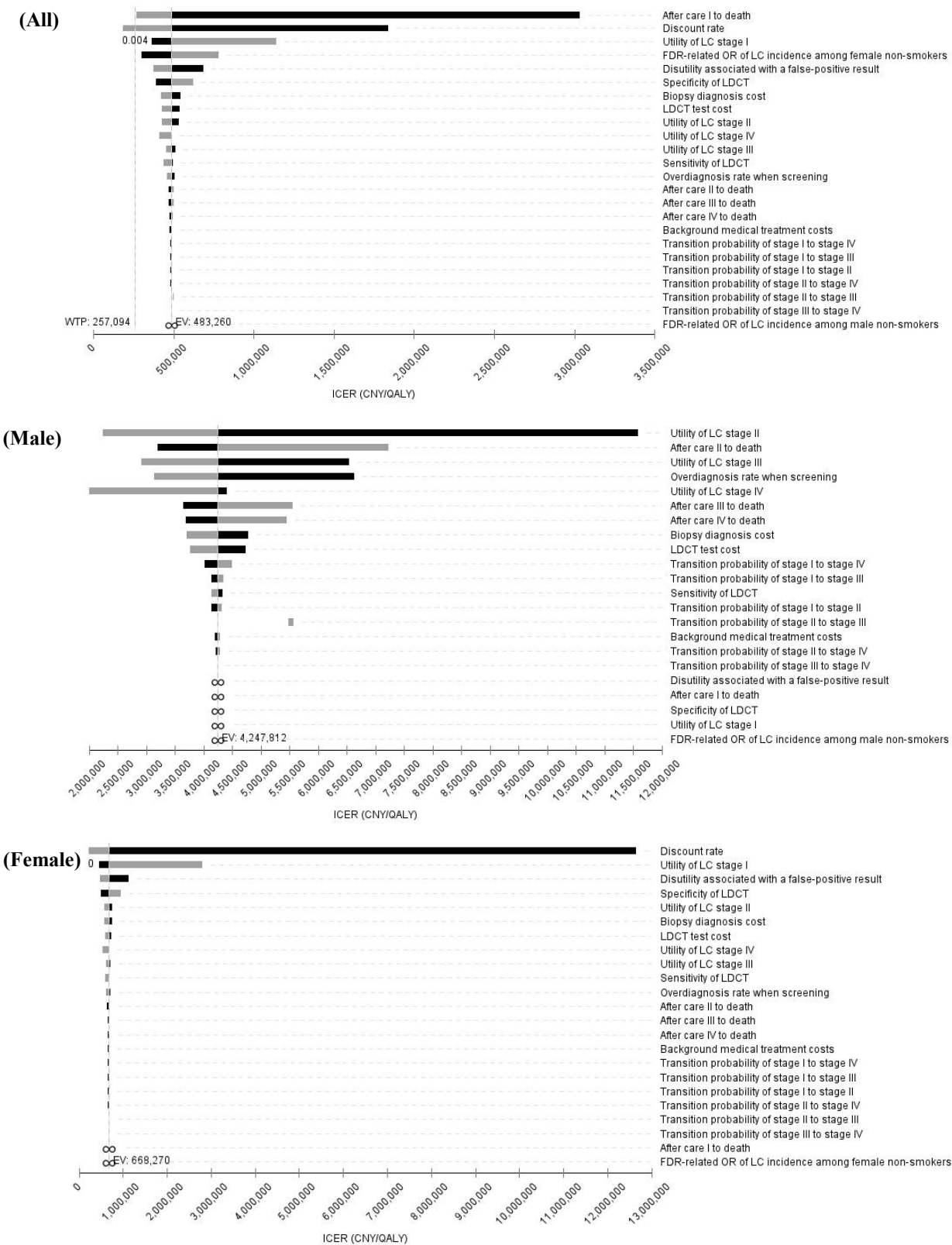


Fig. S9. Univariate sensitivity analyses of the ICER of 55_annual strategy (the strategy gaining most QALYs) vs the strategy preceding it on the efficiency frontier (55_biennial) for lung cancer. FDR, first-degree relative; OR, odds ratio; LDCT, Low-Dose Computed Tomography; LC, lung cancer. ICER, incremental cost-effectiveness ratios; QALY, quality-adjusted life years.

Table S8. ICER thresholds under lower limit of discount rate in 100,000 individuals over the lifetime

All					Male					Female				
Strategy			ICER		Strategy			ICER		Strategy			ICER	
	Cost (CNY, thousand)	QALYs	Vs No screening	Vs the strategy preceding it on the efficiency frontier		Cost (CNY, thousand)	QALYs	Vs No screening	Vs the strategy preceding it on the efficiency frontier		Cost (CNY, thousand)	QALYs	Vs No screening	Vs the strategy preceding it on the efficiency frontier
No screening	109,481	2,281,517	-	-	No screening	108,477	2,135,164	-	-	No screening	109,201	2,443,457	-	-
50_oneoff	138,647	2,281,644	229,654	229,654	50_oneoff	137,355	2,135,295	220,443	220,443	50_oneoff	138,665	2,443,579	241,508	241,508
55_oneoff	139,863	2,281,970	67,036	67,036	55_oneoff	138,113	2,135,612	66,111	66,111	55_oneoff	140,349	2,443,912	68,411	68,411
60_oneoff	140,047	2,282,271	40,522	40,522	60_oneoff	137,678	2,135,905	39,372	39,372	60_oneoff	141,160	2,444,215	42,168	42,168
65_oneoff ^a	138,522	2,282,396	33,007	33,007	65_oneoff ^a	135,461	2,136,015	31,681	31,681	65_oneoff ^a	140,377	2,444,352	34,819	34,819
65_triennial ^a	184,332	2,283,567	36,506	39,135	65_triennial ^a	175,940	2,137,154	33,888	35,540	65_triennial ^a	191,935	2,445,518	40,138	44,223
65_biennial	224,783	2,284,168	43,490	67,323	65_biennial	211,154	2,137,752	39,677	58,975	65_biennial	238,208	2,446,101	48,790	79,382
60_triennial ^a	243,215	2,285,013	38,249	40,720	60_triennial ^a	231,747	2,138,575	36,135	39,283	60_triennial ^a	253,988	2,446,970	41,210	42,731
65_annual	333,056	2,285,182	60,995	Dominated	65_annual	307,811	2,138,785	55,050	Dominated	65_annual	359,220	2,447,059	69,411	Dominated
55_triennial	294,484	2,285,744	43,762	70,130	55_triennial	279,855	2,139,301	41,419	66,240	55_triennial	308,731	2,447,696	47,071	75,455
50_triennial	352,329	2,285,954	54,724	115,922	50_triennial	337,048	2,139,523	52,431	111,064	50_triennial	367,253	2,447,889	58,216	123,218
60_biennial ^a	310,270	2,286,063	44,166	63,873	60_biennial ^a	291,903	2,139,617	41,192	57,751	60_biennial ^a	328,611	2,447,999	48,307	72,546
55_biennial ^a	368,818	2,286,909	48,094	69,197	55_biennial ^a	348,551	2,140,458	45,344	67,321	55_biennial ^a	389,117	2,448,842	51,983	71,795
60_annual	467,956	2,287,091	64,309	Dominated	60_annual	435,061	2,140,686	59,143	Dominated	60_annual	502,135	2,448,942	71,631	Dominated
50_biennial	455,134	2,287,240	60,394	Dominated	50_biennial	433,743	2,140,805	57,655	Dominated	50_biennial	476,596	2,449,149	64,541	Dominated
55_annual ^a	608,318	2,288,224	74,374	182,154	55_annual ^a	570,837	2,141,833	69,328	161,696	55_annual	789,911	2,450,028	103,595	Dominated
50_annual	749,154	2,288,258	94,891	Dominated	50_annual	709,906	2,141,906	89,200	Dominated	55_annual ^a	647,243	2,450,045	81,673	214,577

a: These strategies comprised the cost-effectiveness efficiency frontier.

ICER, incremental cost-effectiveness ratios; QALY, quality-adjusted life years.

Table S9. ICER thresholds under upper limit of discount rate in 100,000 individuals over the lifetime

All					Male					Female				
Strategy		ICER			Strategy		ICER			Strategy		ICER		
		Cost (CNY, thousand)	QALYs	Vs No screening			Cost (CNY, thousand)	QALYs	Vs No screening			Cost (CNY, thousand)	QALYs	Vs No screening
		Vs the strategy preceding it on the efficiency frontier					Vs the strategy preceding it on the efficiency frontier					Vs the strategy preceding it on the efficiency frontier		
50_oneoff	56,629	1,054,614	Dominated	Dominated	50_oneoff	56,580	1,016,555	Dominated	Dominated	50_oneoff	56,420	1,095,791	Dominated	Dominated
No screening	30,629	1,054,640	-	-	No screening	30,778	1,016,578	-	-	No screening	30,218	1,095,821	-	-
55_oneoff	49,962	1,054,744	187,086	187,086	55_oneoff	49,678	1,016,684	178,795	178,795	55_oneoff	49,994	1,095,922	197,691	197,691
65_oneoff ^a	39,005	1,054,790	56,131	56,131	65_oneoff ^a	38,553	1,016,726	52,745	52,745	65_oneoff ^a	39,227	1,095,970	60,648	60,648
60_oneoff	43,596	1,054,800	81,297	Dominated	60_oneoff	43,174	1,016,739	76,988	Dominated	60_oneoff	43,776	1,095,977	87,101	Dominated
65_triennial ^a	47,454	1,054,938	56,561	56,994	65_triennial ^a	45,962	1,016,872	51,625	50,499	65_triennial ^a	48,810	1,096,114	63,460	66,353
65_biennial	55,330	1,055,013	66,205	104,133	65_biennial	52,852	1,016,950	59,410	88,982	65_biennial	57,782	1,096,185	75,827	127,183
65_annual	80,945	1,055,138	101,081	167,194	65_annual	75,832	1,017,085	88,959	140,676	65_annual	86,286	1,096,293	118,923	209,955
60_triennial ^a	70,106	1,055,223	67,734	79,380	60_triennial ^a	67,454	1,017,160	63,022	74,667	50_annual	342,602	1,096,317	Dominated	Dominated
50_annual	330,410	1,055,231	Dominated	Dominated	50_annual	318,728	1,017,231	Dominated	Dominated	60_triennial ^a	72,673	1,096,393	74,319	85,751
50_triennial	144,596	1,055,294	174,353	Dominated	50_triennial	140,563	1,017,243	165,085	Dominated	50_triennial	148,618	1,096,448	189,069	Dominated
60_biennial ^a	87,359	1,055,373	77,412	115,015	60_biennial ^a	83,142	1,017,314	71,154	101,895	60_biennial ^a	91,636	1,096,534	86,226	134,454
55_triennial	94,500	1,055,374	87,049	Dominated	55_triennial	90,907	1,017,315	81,579	Dominated	55_triennial	98,071	1,096,537	94,802	Dominated
50_biennial	191,827	1,055,449	199,435	Dominated	50_biennial	185,862	1,017,408	186,997	Dominated	50_biennial	197,906	1,096,587	219,099	Dominated
60_annual	132,433	1,055,460	124,204	Dominated	60_annual	124,446	1,017,420	111,261	Dominated	60_annual	140,806	1,096,593	143,276	Dominated
55_biennial ^a	119,712	1,055,549	98,007	183,708	55_biennial ^a	114,500	1,017,497	91,173	171,959	55_biennial ^a	125,016	1,096,701	107,753	199,304
55_annual ^a	211,693	1,055,599	188,816	Dominated	55_annual ^a	201,260	1,017,578	170,461	Dominated	55_annual ^a	222,601	1,096,709	216,773	Dominated

a: These strategies comprised the cost-effectiveness efficiency frontier.

ICER, incremental cost-effectiveness ratios; QALY, quality-adjusted life years.

Table S10. ICER thresholds under extreme parameter values of FDR-related OR of lung cancer incidence in 100,000 male individuals over the lifetime

FDR-related OR of lung cancer incidence among male individuals who do not smoke: 1.01					FDR-related OR of lung cancer incidence among male individuals who do not smoke: 3.49				
Strategy	Cost (CNY, thousand)	QALYs	ICER		Strategy	Cost (CNY, thousand)	QALYs	ICER	
			Vs No screening	Vs the strategy preceding it on the efficiency frontier				Vs No screening	Vs the strategy preceding it on the efficiency frontier
50_annual	381,116	1,292,459	Dominated	Dominated	No screening	85,625	1,273,830	-	-
50_oneoff	51,931	1,292,515	Dominated	Dominated	50_oneoff	113,378	1,274,017	148,412	148,412
No screening	25,664	1,292,592	-	-	55_oneoff	109,487	1,274,294	51,433	51,433
55_oneoff	46,891	1,292,625	Dominated	Dominated	65_oneoff ^a	99,484	1,274,398	24,387	24,387
60_oneoff	41,461	1,292,697	150,301	150,301	60_oneoff	104,405	1,274,435	31,014	132,208
65_oneoff ^a	36,933	1,292,712	94,145	94,145	65_triennial ^a	114,780	1,275,019	24,524	24,650
65_triennial ^a	49,923	1,292,846	95,590	96,880	65_biennial	127,833	1,275,374	27,325	36,682
65_biennial	62,007	1,292,899	118,149	224,520	65_annual	167,743	1,276,099	36,192	49,035
50_triennial	158,023	1,292,935	Dominated	Dominated	60_triennial ^a	148,302	1,276,122	27,344	30,382
65_annual	99,907	1,292,940	212,976	Dominated	55_triennial	180,212	1,276,792	31,936	47,654
50_biennial	214,496	1,292,963	Dominated	Dominated	60_biennial ^a	174,984	1,276,815	29,931	38,486
55_annual	258,105	1,292,992	Dominated	Dominated	50_triennial	233,984	1,277,099	45,381	207,960
60_triennial ^a	78,386	1,293,040	117,589	146,282	55_biennial ^a	216,389	1,277,632	34,387	50,666
60_annual	166,311	1,293,084	Dominated	Dominated	60_annual	240,898	1,277,647	40,680	Dominated
55_triennial	106,941	1,293,101	159,665	Dominated	50_biennial	294,618	1,278,108	48,850	164,481
60_biennial ^a	102,840	1,293,136	141,830	255,296	55_annual ^a	339,420	1,278,857	50,480	100,436
55_biennial ^a	140,098	1,293,196	189,437	Dominated	50_annual ^a	466,643	1,279,135	71,823	Dominated

a: These strategies comprised the cost-effectiveness efficiency frontier.

ICER, incremental cost-effectiveness ratios; QALY, quality-adjusted life years. FDR, first-degree relative; OR, odds ratio.

Table S11. ICER thresholds under extreme parameter values of FDR-related OR of lung cancer incidence in 100,000 female individuals over the lifetime

FDR-related OR of lung cancer incidence among female individuals who do not smoke: 1.77					FDR-related OR of lung cancer incidence among female individuals who do not smoke: 2.91				
Strategy	Cost (CNY, thousand)	QALYs	ICER		Strategy	Cost (CNY, thousand)	QALYs	ICER	
			Vs No screening	Vs the strategy preceding it on the efficiency frontier				Vs No screening	Vs the strategy preceding it on the efficiency frontier
50_oneoff	64,991	1,414,839	Dominated	Dominated	No screening	57,590	1,408,444	-	-
No screening	37,987	1,414,872	-	-	50_oneoff	85,113	1,408,504	Dominated	Dominated
55_oneoff	60,792	1,414,987	197,874	197,874	55_oneoff	81,297	1,408,707	90,239	90,239
60_oneoff	55,968	1,415,076	88,209	88,209	60_oneoff	76,584	1,408,818	50,806	50,806
65_oneoff ^a	51,701	1,415,089	63,121	63,121	65_oneoff ^a	72,209	1,408,819	39,016	39,016
65_triennial ^a	69,123	1,415,323	68,979	74,416	65_triennial ^a	90,442	1,409,227	41,943	44,628
65_biennial	85,231	1,415,429	84,803	152,360	65_biennial	106,886	1,409,441	49,439	76,893
65_annual	133,007	1,415,570	136,196	259,386	65_annual	155,353	1,409,821	71,019	109,403
50_annual	435,216	1,415,657	Dominated	Dominated	60_triennial ^a	125,009	1,409,912	45,944	50,524
60_triennial ^a	101,968	1,415,698	77,491	87,756	55_triennial	158,278	1,410,294	54,433	87,010
50_triennial	186,711	1,415,778	164,142	Dominated	60_biennial ^a	156,255	1,410,322	52,528	76,043
55_triennial	134,091	1,415,871	96,222	185,555	50_triennial	211,827	1,410,365	80,313	Dominated
60_biennial ^a	132,445	1,415,900	91,930	150,990	60_annual	233,827	1,410,689	78,499	211,507
60_annual	209,181	1,415,961	157,169	Dominated	55_biennial ^a	198,291	1,410,778	60,278	92,210
50_biennial	249,962	1,415,977	191,769	Dominated	50_biennial	276,502	1,410,901	89,120	Dominated
55_annual	308,542	1,416,086	222,934	Dominated	50_annual	463,603	1,411,104	152,621	Dominated
55_biennial ^a	173,072	1,416,099	110,116	203,899	55_annual ^a	335,474	1,411,254	98,896	Dominated

a: These strategies comprised the cost-effectiveness efficiency frontier.

ICER, incremental cost-effectiveness ratios; QALY, quality-adjusted life years. FDR, first-degree relative; OR, odds ratio.

Table S12. ICER thresholds under lower limit of rate of after care I to death in 100,000 individuals over the lifetime

All					Male					Female				
ICER					ICER					ICER				
Strategy	Cost	QALYs	Vs No screening	Vs the strategy preceding it on the efficiency frontier	Strategy	Cost	QALYs	Vs No screening	Vs the strategy preceding it on the efficiency frontier	Strategy	Cost	QALYs	Vs No screening	Vs the strategy preceding it on the efficiency frontier
	(CNY, thousand)								(CNY, thousand)					
No screening	47,386	1,346,258	-	-	No screening	47,387	1,285,946	-	-	No screening	46,923	1,412,057	-	-
50_oneoff	74,722	1,346,324	Dominated	Dominated	50_oneoff	74,487	1,286,013	Dominated	Dominated	50_oneoff	74,502	1,412,122	424,063	858,883
55_oneoff	70,503	1,346,514	90,134	90,134	55_oneoff	69,967	1,286,201	88,608	88,608	55_oneoff	70,589	1,412,314	92,180	92,180
65_oneoff ^a	60,887	1,346,604	38,956	38,956	65_oneoff ^a	59,934	1,286,284	37,104	37,104	65_oneoff ^a	61,419	1,412,407	41,434	41,434
60_oneoff	65,482	1,346,617	50,334	Dominated	60_oneoff	64,689	1,286,302	48,539	Dominated	60_oneoff	65,832	1,412,415	52,790	Dominated
65_triennial ^a	76,944	1,346,976	41,173	43,242	65_triennial ^a	74,087	1,286,648	38,037	38,906	65_triennial ^a	79,536	1,412,774	45,502	49,382
65_biennial	91,430	1,347,177	47,917	71,973	65_biennial	86,756	1,286,849	43,579	62,886	65_biennial	96,037	1,412,968	53,939	85,140
65_annual	135,205	1,347,555	67,695	100,557	65_annual	125,999	1,287,238	60,856	88,011	65_annual	144,771	1,413,322	77,374	119,068
60_triennial ^a	109,699	1,347,635	45,252	49,695	60_triennial ^a	105,169	1,287,301	42,648	47,605	60_triennial ^a	114,023	1,413,430	48,864	52,535
55_triennial	141,444	1,348,009	53,719	84,900	55_triennial	135,500	1,287,674	50,987	81,250	55_triennial	147,289	1,413,801	57,560	89,793
60_biennial ^a	138,161	1,348,033	51,144	71,537	60_biennial ^a	130,956	1,287,699	47,679	64,811	60_biennial ^a	145,402	1,413,817	55,943	81,053
50_triennial	194,543	1,348,095	80,099	Dominated	50_triennial	188,078	1,287,765	77,335	858,883	50_triennial	200,926	1,413,880	84,466	Dominated
60_annual	209,547	1,348,424	74,871	182,576	60_annual	196,202	1,288,111	68,739	158,295	60_annual	223,456	1,414,171	83,527	221,026
55_biennial ^a	178,943	1,348,489	58,958	89,341	55_biennial ^a	170,464	1,288,155	55,703	86,490	55_biennial ^a	187,498	1,414,270	63,535	93,087
50_biennial	256,427	1,348,638	87,817	Dominated	50_biennial	247,053	1,288,311	84,419	Dominated	50_biennial	265,903	1,414,409	93,093	Dominated
50_annual	435,261	1,348,928	145,279	Dominated	50_annual	417,360	1,288,642	137,214	Dominated	50_annual	453,879	1,414,635	157,836	Dominated
55_annual ^a	323,064	1,349,018	99,858	Dominated	55_annual ^a	321,013	1,288,717	98,754	Dominated	55_annual ^a	325,386	1,414,747	103,533	Dominated

a: These strategies comprised the cost-effectiveness efficiency frontier.

ICER, incremental cost-effectiveness ratios; QALY, quality-adjusted life years.

Table S13. ICER thresholds under upper limit of rate of after care I to death in 100,000 individuals over the lifetime

All					Male					Female				
Strategy			ICER		Strategy			ICER		Strategy			ICER	
	Cost (CNY, thousand)	QALYs	Vs No screening	Vs the strategy preceding it on the efficiency frontier		Cost (CNY, thousand)	QALYs	Vs No screening	Vs the strategy preceding it on the efficiency frontier		Cost (CNY, thousand)	QALYs	Vs No screening	Vs the strategy preceding it on the efficiency frontier
50_oneoff	73,743	1,346,163	Dominated	Dominated	50_oneoff	73,553	1,285,859	Dominated	Dominated	50_oneoff	73,478	1,411,953	Dominated	Dominated
No screening	46,993	1,346,193	-	-	No screening	47,011	1,285,884	-	-	No screening	46,515	1,411,990	-	-
55_oneoff	69,309	1,346,317	179,282	179,282	55_oneoff	68,821	1,286,012	170,575	170,575	55_oneoff	69,350	1,412,109	190,725	190,725
60_oneoff	64,235	1,346,412	78,764	78,764	60_oneoff	63,489	1,286,104	74,711	74,711	60_oneoff	64,549	1,412,204	84,281	84,281
65_oneoff	59,808	1,346,426	54,880	54,880	65_oneoff	58,902	1,286,114	51,713	51,713	65_oneoff	60,303	1,412,223	59,138	59,138
65_triennial	75,234	1,346,694	56,397	57,722	65_triennial	72,448	1,286,378	51,517	51,346	65_triennial	77,778	1,412,484	63,257	66,936
65_biennial	89,268	1,346,820	67,368	110,709	65_biennial	84,684	1,286,508	60,400	94,147	65_biennial	93,817	1,412,602	77,298	136,249
65_annual	131,847	1,347,001	104,948	183,942	65_annual	122,777	1,286,706	92,120	153,112	65_annual	141,328	1,412,754	124,043	235,260
60_triennial	106,419	1,347,094	65,946	77,890	60_triennial	102,016	1,286,781	61,326	73,339	50_annual	442,798	1,412,809	Dominated	Dominated
50_annual	424,530	1,347,158	Dominated	Dominated	50_triennial	182,865	1,286,906	132,961	Dominated	60_triennial	110,654	1,412,875	72,462	84,100
50_triennial	189,118	1,347,200	141,062	Dominated	50_annual	407,050	1,286,942	Dominated	Dominated	50_triennial	195,326	1,412,957	153,849	Dominated
55_triennial	137,052	1,347,285	82,488	160,667	55_triennial	131,276	1,286,978	77,043	148,675	55_triennial	142,771	1,413,056	90,289	177,497
60_biennial	133,858	1,347,323	76,852	119,738	60_biennial	126,818	1,287,016	70,474	105,318	60_biennial	140,986	1,413,089	85,918	141,465
50_biennial	249,057	1,347,423	164,248	Dominated	50_biennial	239,968	1,287,143	153,256	Dominated	60_annual	217,279	1,413,152	146,904	Dominated
60_annual	203,524	1,347,431	126,469	Dominated	60_annual	190,405	1,287,155	112,805	Dominated	50_biennial	258,300	1,413,156	181,614	Dominated
55_biennial	173,161	1,347,536	93,954	184,879	55_biennial	164,897	1,287,238	87,084	172,087	55_annual	316,400	1,413,265	211,621	Dominated
55_annual	299,523	1,347,577	182,395	Dominated	55_annual	283,396	1,287,329	163,585	Dominated	55_biennial	181,556	1,413,290	103,869	Cost-saving

a: These strategies comprised the cost-effectiveness efficiency frontier.

ICER, incremental cost-effectiveness ratios; QALY, quality-adjusted life years.

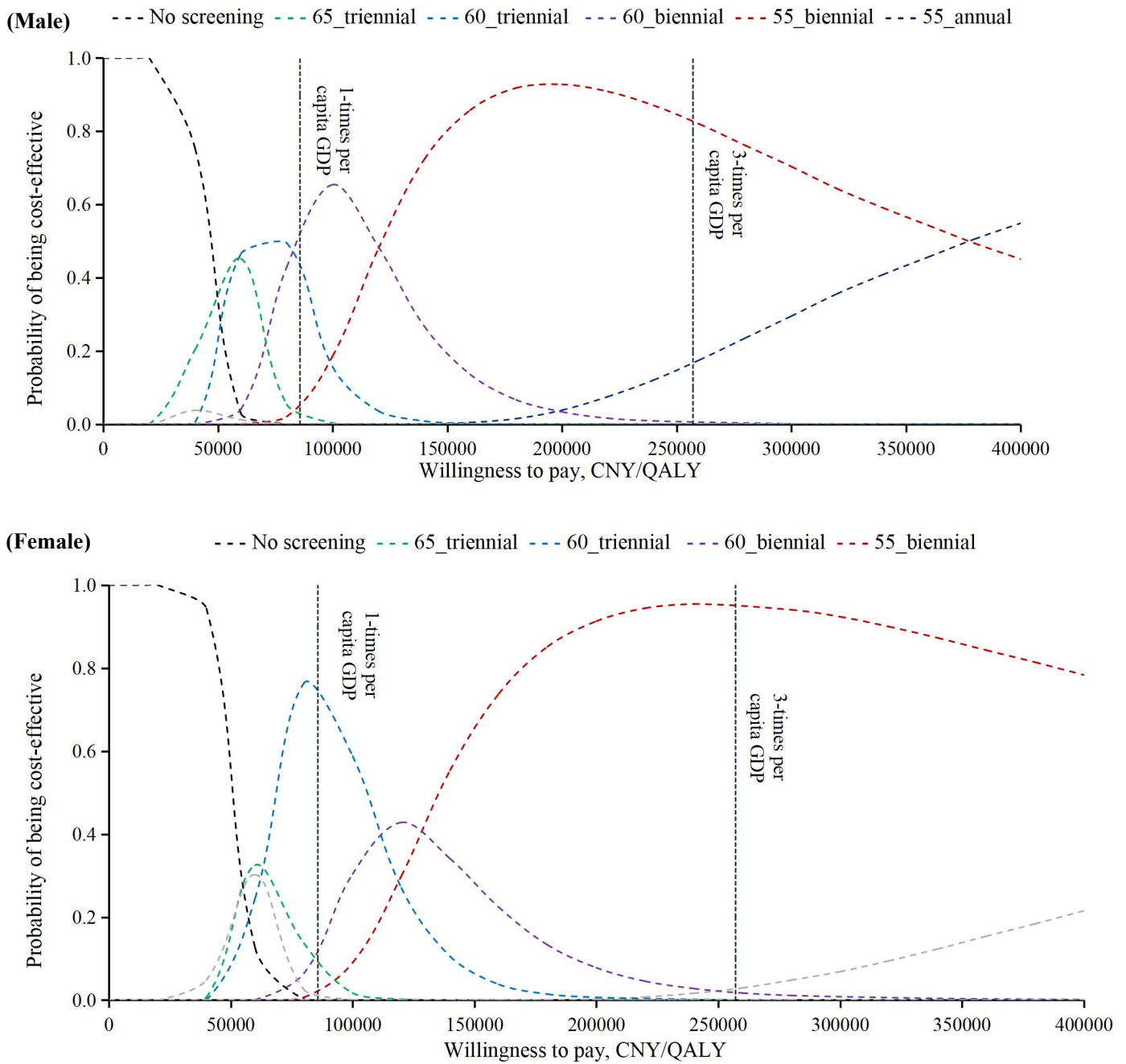


Fig. S10. Cost-effectiveness acceptability curves for all strategies, by sex. Intervention strategies that never have the highest probability of being cost-effective within the willingness-to-pay threshold of threetimes per-capita GDP are represented in grey. QALY, quality-adjusted life years.

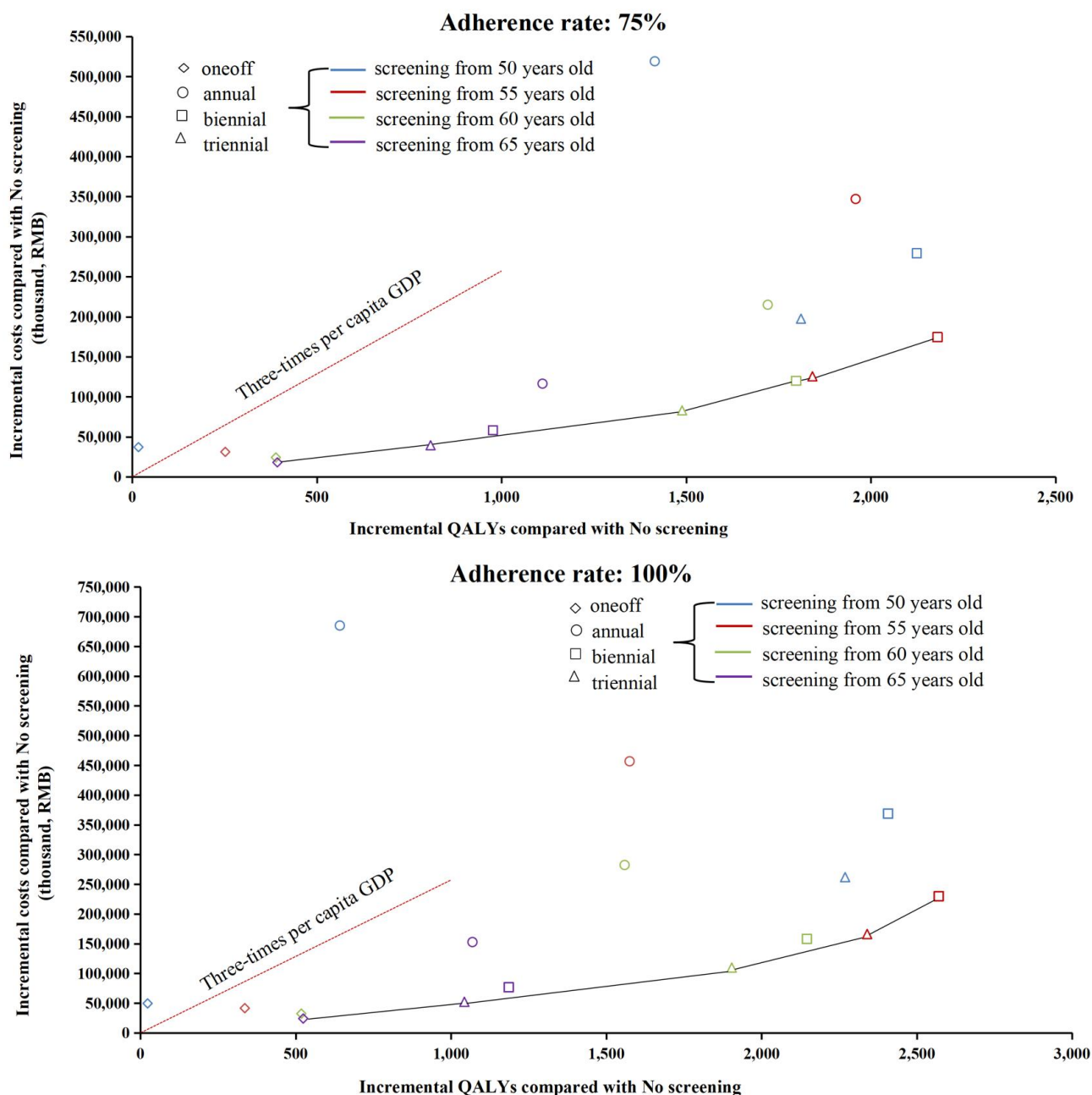


Fig. S11. Cost-effectiveness frontiers for all 16 screening strategies at various adherence rate. Incremental QALYs and incremental costs of intervention strategies are obtained for 100,000 individuals. QALY, quality-adjusted life years.

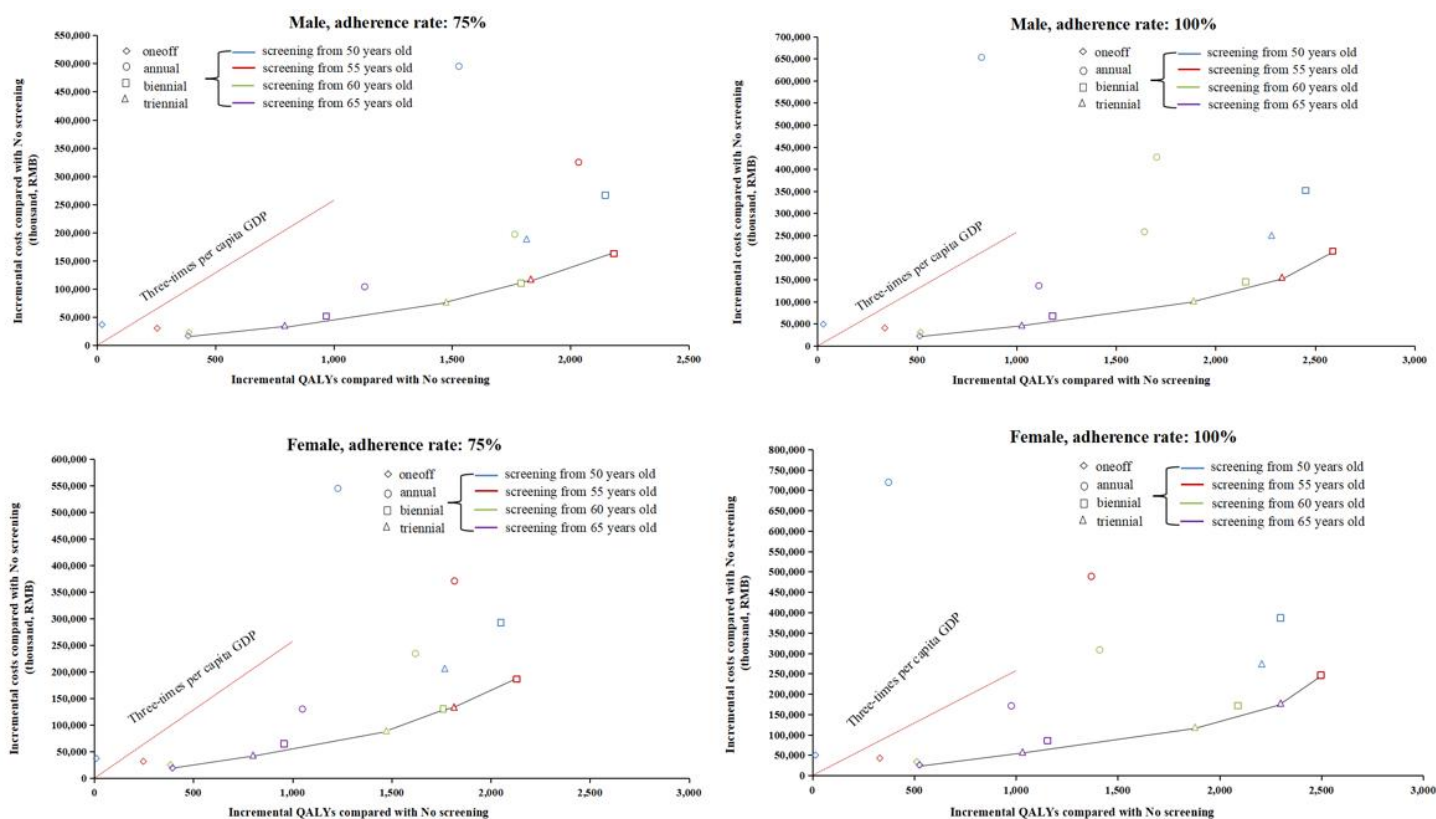


Fig. S12. Cost-effectiveness frontiers for all 16 screening strategies at various adherence rate, by sex. Incremental QALYs and incremental costs of intervention strategies are obtained for 100,000 individuals.

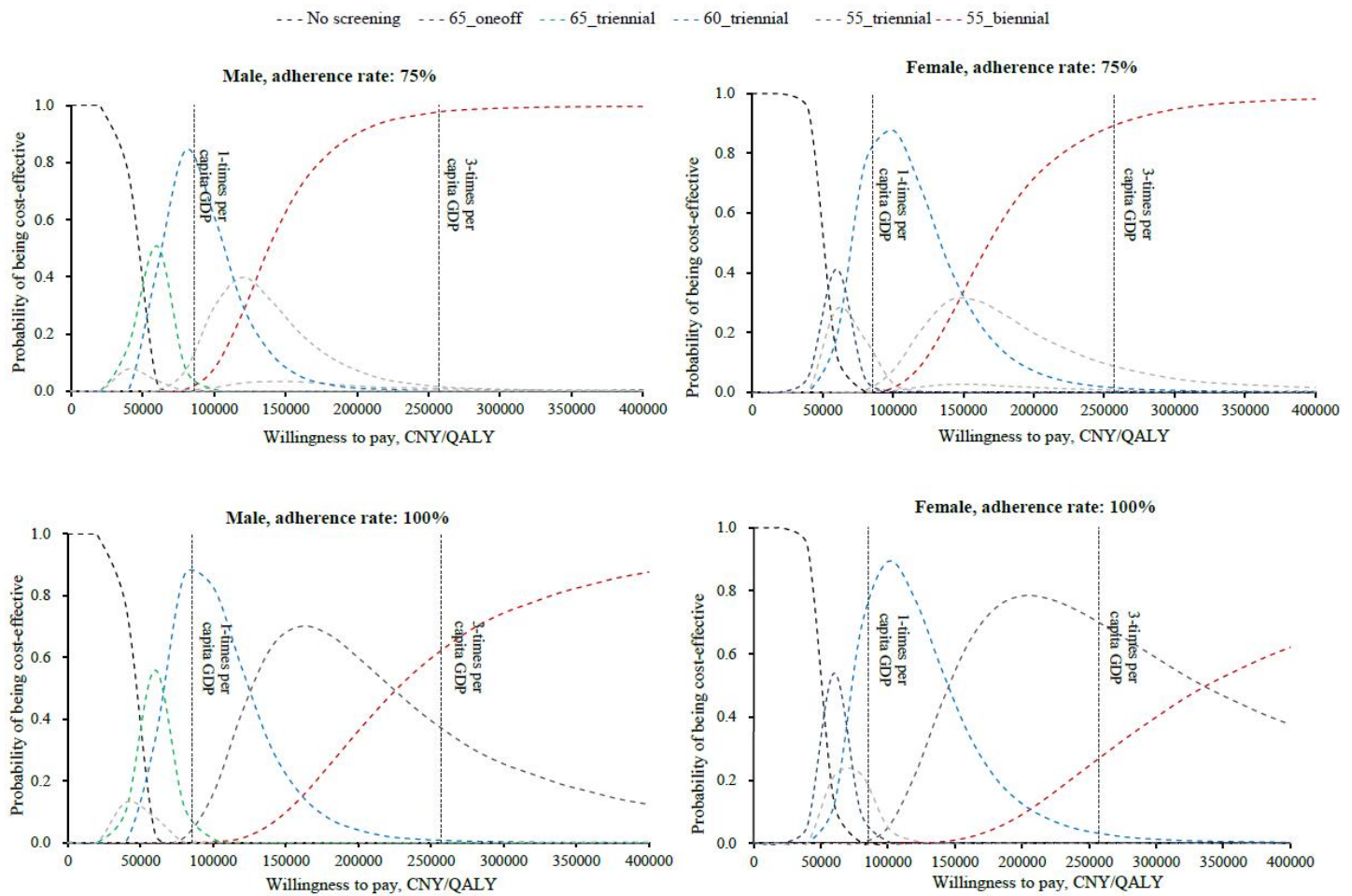


Fig. S13. Cost-effectiveness acceptability curves for all strategies at various adherence rate, by sex. Intervention strategies that never have the highest probability of being cost-effective within the willingness-to-pay threshold of threetimes per-capita GDP are represented in grey. QALY, quality-adjusted life years.

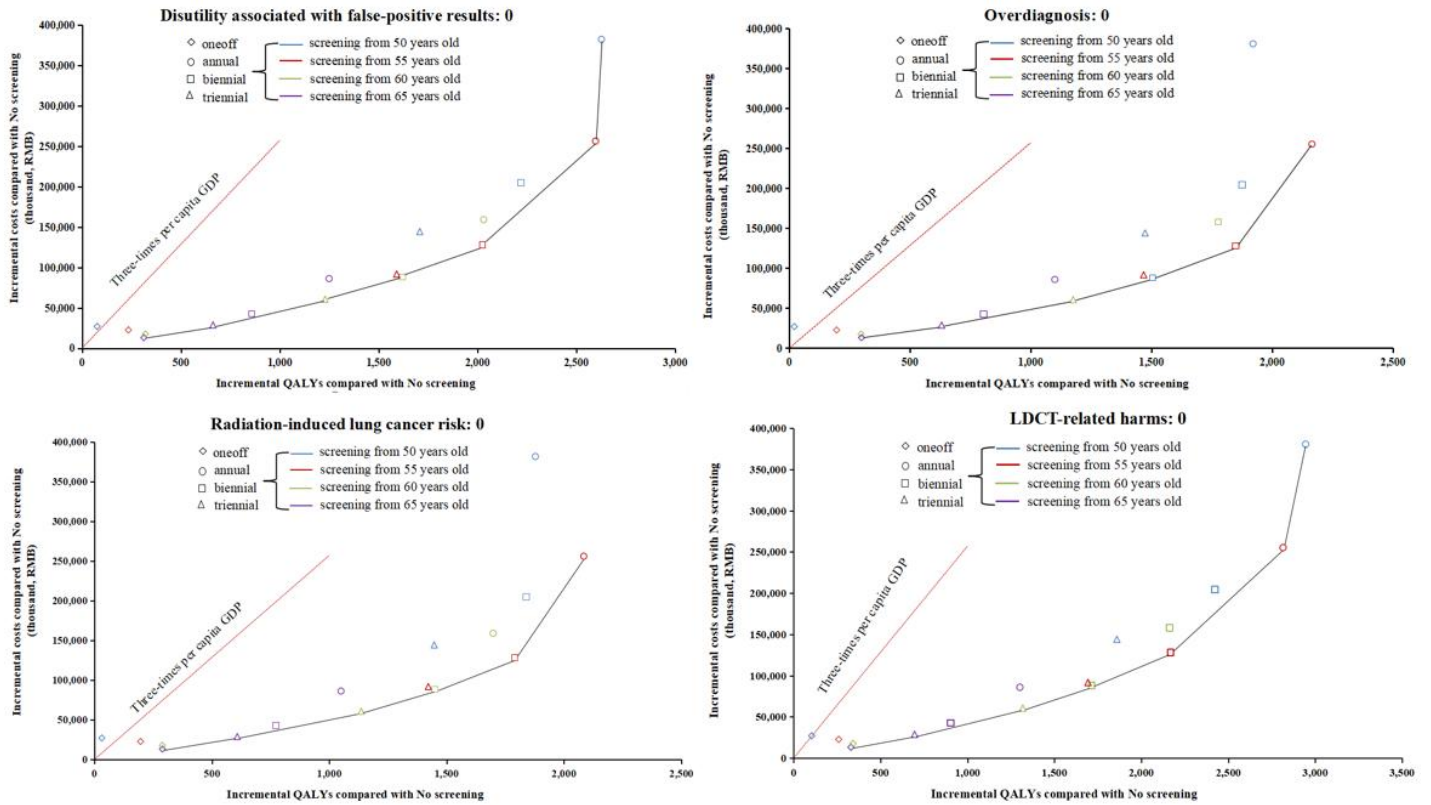
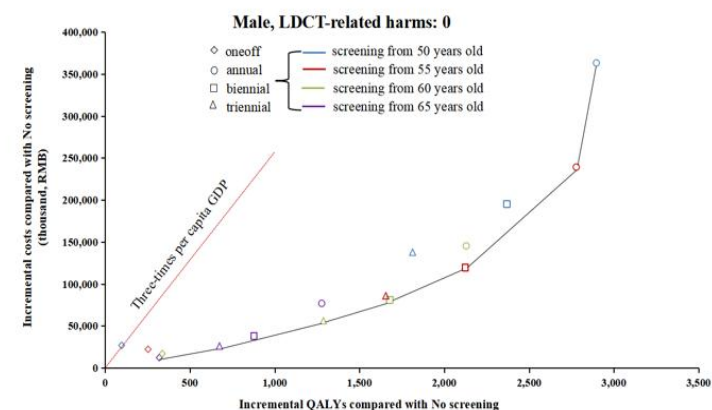
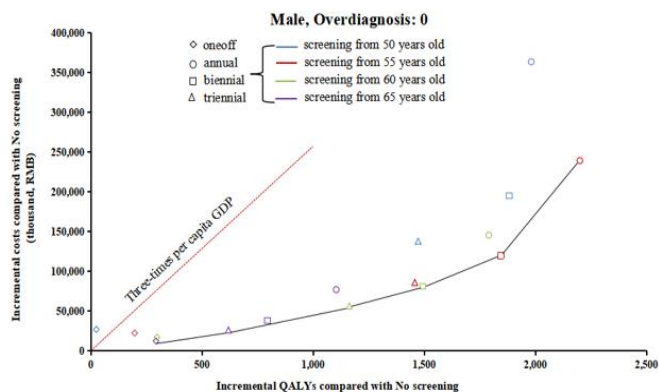
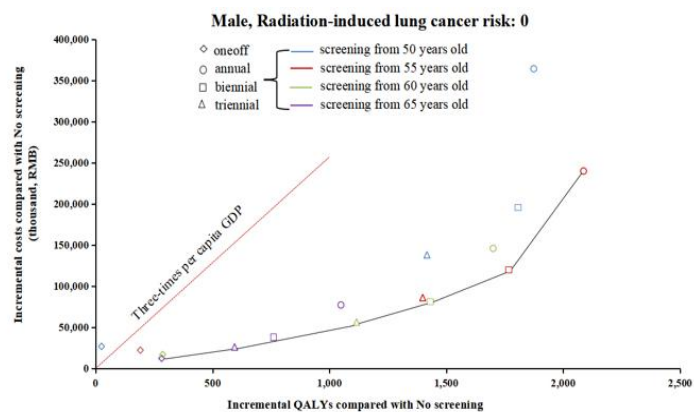
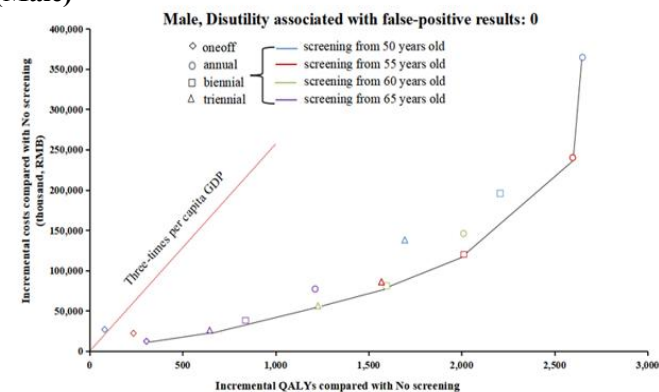


Fig. S14. Cost-effectiveness frontiers for all 16 screening strategies if disregarding potential LDCT-harms. Incremental QALYs and incremental costs of intervention strategies are obtained for 100,000 individuals. QALY, quality-adjusted life years.

(Male)



(Female)

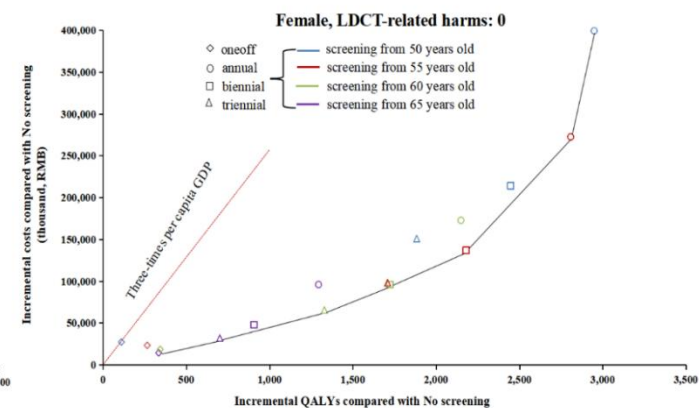
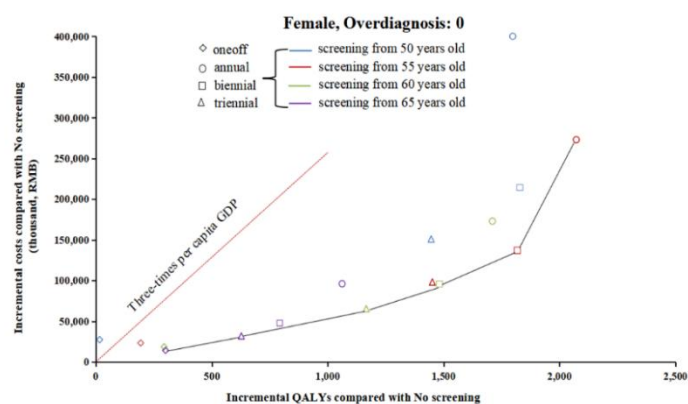
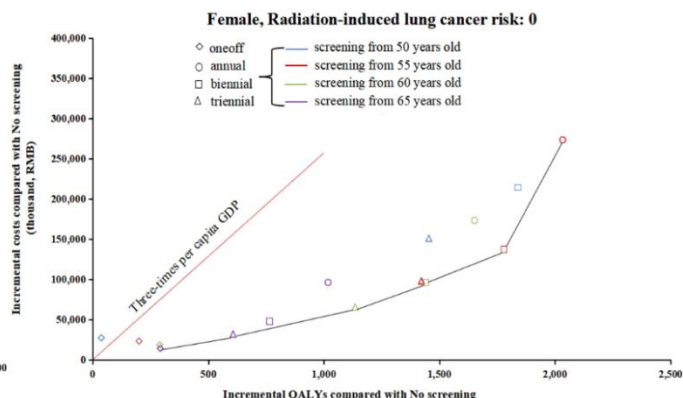
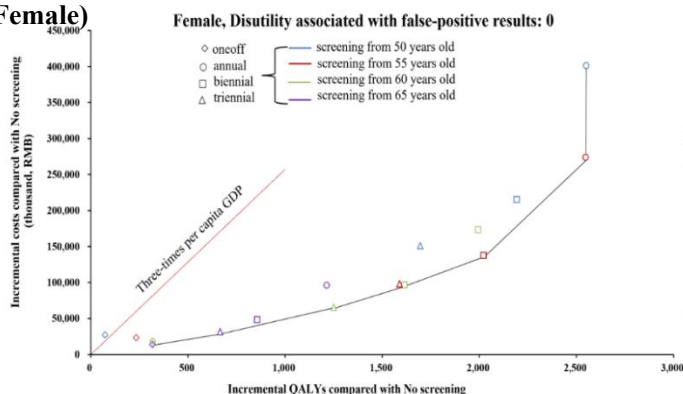


Fig. S15. Cost-effectiveness frontier for all screening strategies if disregarding potential LDCT-harms, by sex. Incremental QALYs and incremental costs of intervention strategies are obtained for 100,000 individuals. QALY, quality-adjusted life years.

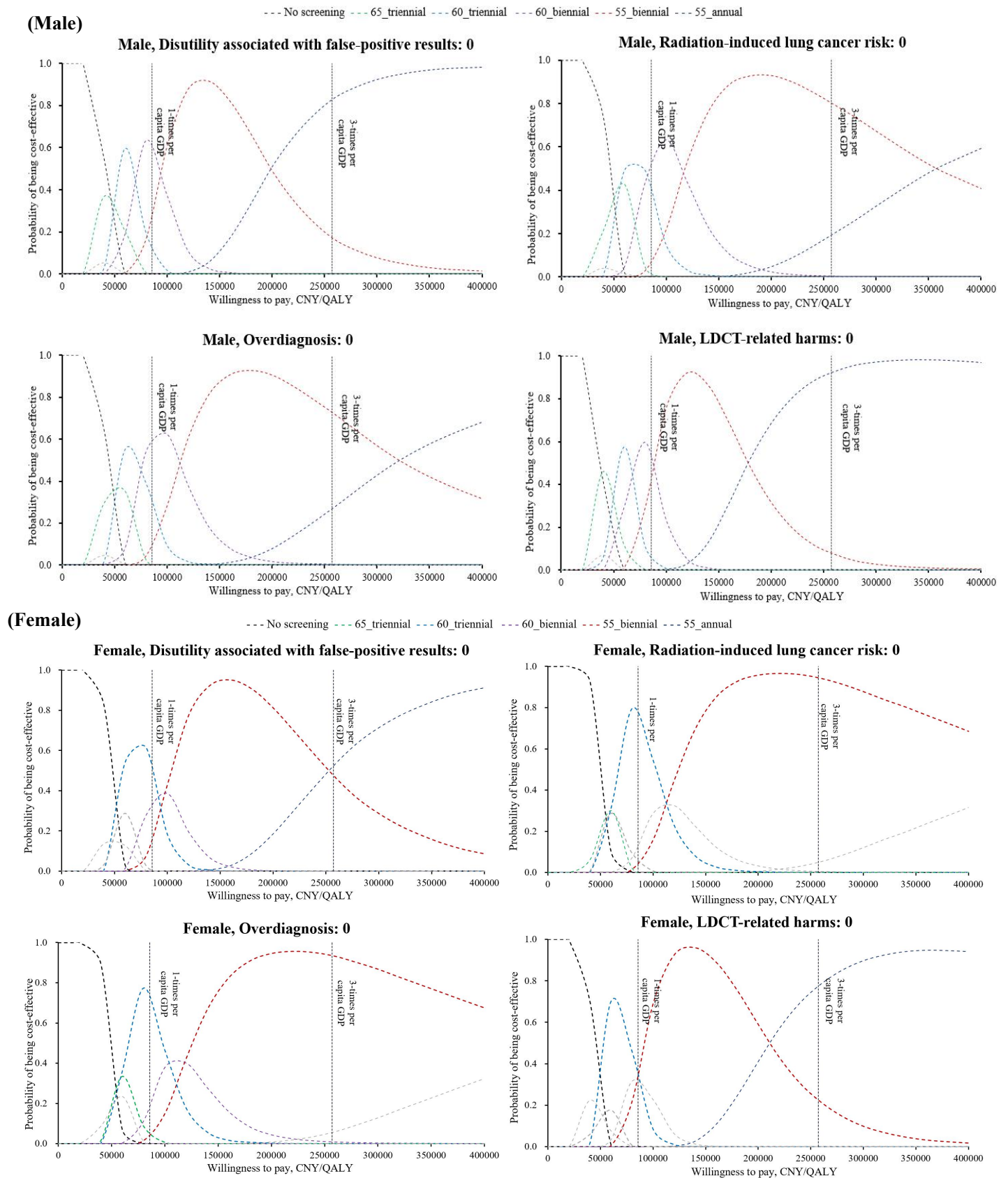


Fig. S16. Cost-effectiveness acceptability curves for all strategies if disregarding potential LDCT-harms, by sex.

Intervention strategies that never have the highest probability of being cost-effective within the willingness-to-pay threshold of threetimes per-capita GDP are represented in grey. QALY, quality-adjusted life years.

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