

Table S1 Detailed information of included studies

Study	Inclusion criteria	Exclusion criteria	Smoking pack-years for inclusion (pack-years)	Median/mean number of pack-years of smoking (year)	Median/mean age (year)	Percentages of participants in different age group (%)	Percentages of cancers in different age group (%)	Positivity criteria of nodules	CT setting
Fan	Minimum age of 35 years old, without any respiratory symptoms and without any pulmonary malignant tumor history	Pregnant woman, subject with metallic stent/internal fixation in the chest and/or back, subject suffering from dysfunction/apparent damage of important organs and subject with respiratory symptoms, such as irritable cough, hemoptysis, and chest pain	None	NA	53 ± 10	NA	NA	0	≤1.5 mSv, pitch 0.8 or 1.02, collimation 128x 0.625 mm or 64x 0.625 mm
Miller	Screening criteria changed over the 5-year study, first from the International Early Lung Cancer Action Program (I-ELCAP [2008 through 2010]), and then the National Comprehensive Cancer Network (NCCN [2011 through 2013]) guidelines for moderate- and high-risk patients were instituted.		NA	Current 48 (2-75) Former 62 (7-106)	60 (47-89)	< 50 yr 13 50-59 yr 33 60-69 yr 40 70+ yr 14	NA	NCNs ≥ 6	NA
Lei	Minimum age of 40 years.	0	NA	52	NA	NA	NA	0	120kVp, 30mA, pitch 1, thickness 8 mm
Henschke	The criteria of this study specified a common regimen of screening but allowed each participating institution to specify its criteria for enrollment.		NA	30 (0-141)	61 (40-85)	40-49 yr 12.9 50-59 yr 31.5 60-69 yr 38.6 70-79 yr 15.3 80-86 yr 1.7	40-49 yr 2.0 50-59 yr 16.3 60-69 yr 50.2 70-79 yr 28.3 80-86 yr 3.2	Solid or partly solid nodule ≥ 5 OR NCNs ≥ 8	140kVp, 40mA, pitch 1 or 2, collimation 10 mm.
Bastarrika	Minimum age of 40 years, minimum history of smoking of 10 pack-years, and with no any history of prior cancer, other than non-melanoma skin cancer and adequately treated "in situ" carcinoma of the cervix.	Referred potential manifestations of lung cancer, such as new onset or worsening cough, new onset dyspnea, hemoptysis, and unexplained weight loss.	40	30 (19–49.5)	54.7 (46.1-63.3)	NA	NA	NCNs ≥ 5	140kVp, 43mAs, pitch 1.5, collimation 8 mm
Diederich	Minimum age of 40 years, minimum tobacco consumption of 20 packyears, and ability to hold one's breath for approximately 25 seconds at low-dose CT were recommended.	A recent (6 weeks) history of febrile respiratory tract disease or known pulmonary metastases.	20	45 (20-166)	53 (40-78)	40-49 yr 36.5 50-59 yr 38.3 60-69 yr 20.4 70-79 yr 4.8	≤60 yr 33.3 > 60 yr 66.7	NCNs ≥ 6	120kVp, 50mAs, pitch 1, collimation 8 mm

Sobue	Minimum age of 40 years and smoke cigarettes, but some exceptions have been allowed in practice.	Aged 39 years or younger or 80 years or older at the initial CT screening and smoking status are unknown.	None	NA	NA	40-49 yr 16 50-59 yr 32 60-69 yr 39 70-79 yr 13	40-49 yr 0.0 50-59 yr 14.3 60-69 yr 64.3 70-79 yr 21.4	NCNs ≥ 5	120kVp, 50mA, pitch 2, collimation 10 mm
Sone	Age between 40 and 74 years volunteered for this study.	None	None	NA	NA	NA	NA	0	120kVp, 50mA in 1996 and 25 mA in 1997 and 1998, pitch 2, collimation 10 mm
Yang	Age between 40 and 74 years volunteered for this study, showing at least one high-risk factor: 1) current or former smokers who had a history of at least 20 pack-years of cigarette smoking, and for former smokers, no more than 15 years since quitting; 2) cancer history of any kind in close family members; 3) cancer history of any kind for the participant; 4) occupational exposure to carcinogenic agents (asbestos, dust or radiation); 5) long history of passive smoking (>2 h every day in homes or indoor workplaces for at least ten years); and/or 6) long-term exposure to cooking oil fumes (cooking history of stir frying, frying or deep frying>50 dish-years).	Had previously received a diagnosis of lung cancer, had a performance status (PS) >2, had a CT scan of chest within the last 12 months or had a diagnosis of any other cancer (including lung cancer) within the past 5 years.	20 (not necessary)	10.8 \pm 14	59.8 \pm 5.8	NA	45-49 yr 3.9 50-54 yr 9.8 55-59 yr 33.3 60-64 yr 31.4 65-69 yr 21.6 70-74 yr 0	NCNs ≥ 5	140kvp, 40 mA pitch 1.25, 5-mm increments
Stephenson	Smokers over the age of 45 years with a greater than 20 pack-year smoking history were referred for screening chest CT.	None	20	NA	NA	NA	NA	Nodule ≥ 3	140kvp, 40mA, collimation 10 mm
Chong	Asymptomatic and none had any history of cancer within the previous 5 years.	None	Not necessary	33.3 (smoking group)	55 \pm 6.7	NA	45-49 yr 13.0 50-54 yr 26.1 55-59 yr 43.5 60-64 yr 13.0 ≥ 65 yr 4.3	NCNs ≥ 5	120kvp, 40mA, pitch 0.75-1.5, collimation 5 mm
Luo	Age between 50 to 80 years; asymptomatic; no history of malignant disease in the recent 5 years; adequate performance status (assessed on the basis of the patient's eligibility to undergo thoracic surgery and no lethal disease); and 1) current or former smokers (quit	Suffered from other severe health threats (such as acute myocardial infarction, etc.).	20 (not necessary)	NA	63.46 \pm 6.79	50-59 yr 35.1 60-69 yr 49.9 70-79 yr 15.0	NA	Solid or partly solid nodule ≥ 5 or NCNs ≥ 8 , or a solid	140kvp, 40mA, collimation 1.5 mm

	smoking for less than 5 years) with a minimum of 20 pack-years smoking history, 2) passive smokers, or 3) never smokers with other risk factors of lung cancer including lung cancer family history, history of kitchen fume, or dust exposure.								endobronchial nodule
Rzyman	Aged between 50 and 75 years with a smoking history of at least 20 pack-years, with a family history of smoking, the minimum smoking history was 10 pack-years.	None	20 (not necessary)	35 (0-200)	60.6	NA	NA	Nodule ≥ 5	140kVp, 40mA, pitch 1 or 2, collimation 10 mm.
Lam	Minimum age of 50 years old and had a history of cigarette smoking of at least 20 pack-years at the time of study enrollment. Former smokers were eligible regardless of when they had quit.	Previous diagnosis of lung cancer. Any other history of malignancy (except for nonmelanoma skin cancer or carcinoma in situ of the cervix) diagnosed less than 5 years prior to enrollment. Persons with unexplained hemoptysis, cough, hoarseness, or unintentional weight loss of at least 15 lbs. in the preceding year were also excluded.	20	45.4 \pm 25.0	64.4 \pm 8.0	50-54 yr 9.7 54-59 yr 21.4 60-64 yr 24.0 64-69 yr 18.8 70-74 yr 15.6 ≥ 75 yr 10.4	NA	Nodule ≥ 4	1.5 mSv, a minimum of four channel scanners
Pastorino	Minimum age of 49 years, current or former smokers (having quit smoking within 10 years of recruitment) with at least 20 pack-years of smoking, and no history of cancer within the previous 5 years.	None.	20	39	57	< 55 yr 33.1 55-59 yr 28.4 60-64 yr 23.0 65-69 yr 11.3 ≥ 70 yr 4.2	NA	Nodules > 4.8	120kVp, 30mA, pitch 1.5, collimation 0.75 mm.
Becker	Age between 50 and 69 years with a history of heavy smoking, at least 25 years smoking of at least 15 cigarettes per day, or at least 30 years smoking of at least 10 cigarettes per day including ex-smokers who stopped smoking at most 10 years ago. Further criteria were no cancer diagnosis within the past five years, no medical circumstances preventing surgical treatment in case of a lung cancer diagnosis in screening, and no serious illness shortening life expectancy below 10 years.	None.	30	NA	NA	50-54 yr 46.4 55-59 yr 25.5 60-64 yr 17.0 65-69 yr 11.1	NA	Nodules ≥ 5	1.6–2 mSv, 1 mm thickness

Menezes	Minimum age of 50 years, at least 10 pack-years history of smoking, no prior history of cancer (exception of non-melanotic skin cancer) and general good health. Participation in the study was voluntary, with sources including self-referral or physician recommendation.	None	10	33.7±20.2	60.8±6.7	NA	NA	NCNs ≥5 or non-solid nodule ≥8	120kVp, 40–60mA, 1–1.25mm overlapping slices
Klaveren	Inviting current and former smokers (quit ≤ 10 years ago) who smoked >15 cigarettes/day during >25 years or >10 cigarettes/day during >30 years was most optimal.	Bad self-reported health who were unable to climb 2 flights of stairs and persons with a body weight ≥ 140 kg. With current or past renal cancer, melanoma or breast cancer were not included. Lung cancer diagnosed less than 5 years ago. Lung cancer cases diagnosed 5 years or more ago but still under treatment. Persons who had a chest CT examination less than 1 year before they filled in the first NELSON questionnaire.	30	42±19	59±6	NA	NA	Nodules > 4.8	80-90, 120 and 140 kVp, pitch 1.5, collimation 12 mm
Pedersen	Age between 50 and 70 years and without lung cancer related symptoms. A history of cigarette smoking of at least 20 pack-years. Current or former smokers, and former smokers had to have quit after the age of 50 years and less than 10 years ago. Participants had to be able to climb 2 flights of stairs (36 steps) without pausing. Spirometry is performed annually, and forced expiratory volume in 1 second had to be at least 30% of predicted normal at baseline.	With body weight above 130 kg or previous treatment for lung cancer, breast cancer, malignant melanoma, or hypernephroma. With a history of any other cancer within 5 years or tuberculosis within 2 years or any serious illness that would shorten life expectancy to less than 10 years, as was the case if a prior CT scan of the chest had been performed within the last year.	20	NA	NA	49 yr 0.3 50-54 yr 28.6 55-59 yr 34.1 60-64 yr 27.8 65-69 yr 9.0 70-74 yr 0.3	49 yr 0 50-54 yr 3 55-59 yr 6 60-64 yr 5 65-69 yr 3 70-74 yr 0	NCNs ≥5	120kV, 40mAs, pitch 1.5, collimation 12 mm
Wilson	Age between 50 and 79 years; no personal lung cancer history; nonparticipation in concurrent lung cancer screening studies; no chest computed tomography within 12 months; current or ex-cigarette smoker of at least one-	None	1.5 pack per day for at least 25 years	47 (33-62)	59	50-59 yr 57.3 60-79 yr 42.7	NA	0	140kV, 40-60mAs, pitch 1.5, 2.5 mm thickness

half pack per day for at least 25 years, and, if quit, quit for no more than 10 years before study enrollment; and body weight less than 400 pounds. Individuals were not excluded because of symptoms.

Veronesi	Minimum age of 50 years, asymptomatic volunteers who were current or former heavy (≥ 20 pack-years) smokers. Ex-smokers had stopped not more than 10 years previously.	With malignant disease (except treated non-melanoma skin cancer) or a diagnosis of malignant disease within the previous 5 years.	20	44 (20-255)	57.7 \pm 5.6	≤ 55 yr 40.4 56-60 yr 30.9 61-65 yr 18.6 66-70 yr 7.6 > 70 yr 2.5	14 14 17 10 (> 65)	NCNs > 5	140kVp, 30mA, pitch 1.75, 2.5 mm thickness
Callol	Minimum age of 50 years, active smokers (or who had stopped smoking up to 6 months previously) who smoked more than 30 cigarettes daily for at least 15 years, or 20 cigarettes daily for 20 years, or more than 10 packs/year and in contact with asbestos at work. In addition to the aforementioned risk factors, the inclusion criteria included the absence of neoplastic antecedents or tumor symptoms, and a good physical condition.	Not amenable to surgery, as were those with cancer of some other location, and pregnant women.	10	Men 40 Women 30	Men 60.5 (50-73) Women 60.5 (50-72)	NA	NA	0	120kVp, 50mA, collimation 10 mm
Blanchon	Age between 50 and 75 years, asymptomatic current or former smokers (having quit <15 years from enrollment), cigarette consumption ≥ 15 cigarettes per day for at least 20 years.	Previous history of malignancy; respiratory, cardiovascular or general impairment that might compromise thoracic surgery or a thoracic diagnostic procedure; previous history of congestive heart failure or recent myocardial infarction; active pulmonary infection; previous history of heavy asbestos; and previous history of chest disease that might mimic the radiological appearance of lung cancer	15 cigarettes per	1 (0.25-3)	56 (47-75)	NA	NA	NCNs ≥ 5	100 to 140kV and 20 to 100mA, collimation 1-1.5mm
MacRedmond	Minimum smoking history of 10 pack years and still smoking at age 45, no prior history of cancer, and medically fit for thoracic surgery were recruited (Patients were deemed medically fit if they had no chronic medical	None	10	53.4	56.4 (50-74)	NA	NA	NCNs > 5	50mA or less, pitch 2, reconstructed 5mm

	conditions that would preclude them from surgery, were not oxygen dependent, and could breath hold for 20 seconds).											
Swensen	Minimum age of 50 years and asymptomatic. Had to be current or former (ie, they had to have quit less than 10 years ago) cigarette smokers. A history of cigarette smoking of at least 20 pack-years.	With a history of any cancer within 5 years other than non melanomatous skin cancer, cervical cancer in situ, or localized prostate cancer. Only mentally competent individuals considered healthy enough to undergo pulmonary resection were entered into the study. With a serious illness that decreased life expectancy to less than 5 years was excluded.	20	45 (20-230)	59 (50-85)	NA		NA		NCNs ≥ 4	120 kVp, 40 mA, pitch 1.5	
Pastorino	Minimum age of 50 years, current or former smokers, with a minimum of 20 pack-years smoking history, no history of malignant disease, and adequate performance status (assessed on the basis of the patient's eligibility to undergo thoracic surgery).	None.	20	26 cigarettes/day	58 (50-84)	NA		NA		NCNs > 5	140kV, 40mA, pitch 2, collimation 10mm	
Nawa	None.	None.	NA	NA	NA	50-54 yr 42.5 55-59 yr 34.0 60-65 yr 18.5 65-69 yr 5.5	50-54 yr 38.9 55-59 yr 36.1 60-65 yr 22.2 65-69 yr 2.8		NCNs ≥ 5	120kV, 50mA, pitch 2, collimation 10mm		
Lee	Age between 55 and 74, asymptomatic current or ex-smokers with a smoking history of at least 30 pack-years who had used tobacco within the last 15 years eligible for participation.	With a history of lung cancer, required assistance in daily life or ambulation (Eastern Cooperative Oncology Group score ≥ 2), and received treatment for pulmonary tuberculosis, pneumonia, or interstitial lung disease. With a diagnosis of cancer (except thyroid cancer and skin cancer) within the last 5 years and had undergone	30	39.7 \pm 9.2	63.2 \pm 5.4	NA		NA		NCNs ≥ 4	100 to 140kV and 25 to 50mAs, collimation 0.625 x 64 or 0.6 x 64 x 2 or 0.6 x 32 x 2	

		chest computed tomography (CT) within the last 6 months.							
Lanni	Ages between 55 and 74 with 30 or more years of smoking (1 pack per day) or have patients that quit in the past 15 years. Exposed to asbestos, radon, or other carcinogenic chemicals.	None.	1 pack/day	1.03 pack/day	63	NA	NA	NCNs ≥6	NA
Santos	Age between 55 and 74 years at the time of randomization, had a history of cigarette smoking of at least 30 pack-years, and, if former smokers, had quit within the previous 15 years.	Unable to undergo CT, being pregnant, having previously undergone radiation therapy to the chest, and having severe comorbid disease, such as cardiovascular disease, lung disease, liver disease, kidney disease, or metabolic disease.	30	53.6±19.8	61.9±4.6	NA	NA	Nodule ≥4	120kV, 15mAs maximum, collimation 1mm
Nahorecki	Aged between 55 and 70 of the city of Wroclaw who had consistently smoked a minimum of ten packs of cigarettes per year, was asymptomatic, and had not previously been diagnosed with cancer.	None.	10	NA	NA	NA	NA	Nodule ≥5	100 to 120kV and 3mAs, pitch 1.2, collimation 64 x 0.6mm
Crucitti	Minimum age of 55 years, history of cigarette smoking of at least 15 cigarettes/day, former smokers with a history of cigarette smoking of at least 15 cigarettes/day who have quit smoking addiction less than 10 years before the study, potential or demonstrated occupational exposure (asbestos, radon, beryllium, silica), COPD.	Received oxygen-therapy and had previous personal history of cancer diagnosed within 5 years (except non-melanoma skin cancer, cervical cancer or localized prostate cancer).		22	61.8	NA	NA	NCNs 4	120kV, 35mAs, pitch 1.4, collimation 1.2mm
Aberle	Age between 55 and 74 years, had a history of cigarette smoking of at least 30 pack-years, and, if former smokers, had quit within the previous 15 years.	Received a diagnosis of lung cancer, had undergone chest CT within 18 months before enrollment, had hemoptysis, or had an unexplained weight loss of more than 6.8 kg (15 lb) in the preceding year.	30	NA	NA	< 55 yr < 0.1 50-59 yr 42.8 60-64 yr 30.6 65-69 yr 17.8 70-74 yr 8.8 ≥75 yr < 0.1	NA	NCNs ≥4	Minimum of four channels, 1.5 mSv
Croswell	Age between 55 and 74 years, had a cigarette smoking history of 30 pack-years or more, and were current smokers or had quit in the past 10 years.	Underwent chest CT within 24 months of enrollment, previous lung cancer, removal of part or all	30	NA	NA	55-64 yr 68 65-74 yr 32	NA	NCNs > 3	120 to 140kV and 60mA, pitch 2, collimation 5mm

		of a lung, current treatment of any cancer except nonmelanoma skin cancer, and ongoing participation in a cancer prevention or screening trial other than a smoking cessation study.								
Pegna	Age between 55 and 69 years at the time of enrolment with a smoking history of at least 20 packs–year since the last 10 years.	Former smokers who quit since more than 10 years. With a history of previous cancer other than non-melanoma skin cancer and general conditions precluding thoracic surgery.	20	39	60.9±4.2	55-59 yr 45.5 60-65 yr 36.0 > 65 yr 18.5	NA	NCN≥5 or a non-solid nodule≥10 or the presence of a part-solid nodule	120–140kVp, 20–43mA, collimation 3mm, 1–1.25 with 1–1.25mm reconstruction interval	
Novello	Minimum age of 55 years, current daily smokers or former smokers (up to 10 years before), ≥20 pack-years (calculated by multiplying the number of packs per day by the total number of years smoked) and with no personal history of malignancy.	None.	20	NA	59	55-59 yr 53.4 60-64 yr 32.3 65-69 yr 9.8 70-74 yr 3.6 > 75 yr 0.7	NA	NCNs ≥5	120kV, 33mA and pitch 1.5, collimation 8.8 mm	
Gohagan	Age between 55 and 74 years, to be either a current cigarette smoker or a former smoker who had quit within the previous 10 years, and to have at least a 30-pack-year history of cigarette smoking.	A history of a spiral CT scan examination of the lungs or thorax in the previous 24 months, a history of lung cancer, currently receiving treatment for any cancer other than non-melanoma skin cancer, removal of a portion of a lung or an entire lung, and participation in another cancer screening trial (including the PLCO cancer trial) or a primary cancer prevention trial other than a smoking cessation study.	30	NA	NA	55-59 yr 37.1 60-64 yr 31.0 65-69 yr 20.3 70-74 yr 11.6	NA	NCNs ≥4	120 to 140kV, 60 mA, pitch 2, collimation 5mm	

NCNs, Non-calcified nodules