

Supplementary Material: Commonly Applied Selection Criteria for Lung Cancer Screening May Have Strongly Varying Diagnostic Performance in Different Countries

Hermann Brenner and Agne Krilaviciute

Appendix A. Proportion of men in the target age range who meet study-specific criteria for lung cancer screening in European countries (sorted from highest to lowest prevalence of current smoking).

Country	Eligible population [%] (current smokers [%] + former smokers [%])				
	NLST	MILD	DANTE	ITALUNG	DLCST
Latvia	27 (17 + 10)	44 (33 + 10)	38 (30 + 8)	44 (34 + 10)	45 (34 + 11)
Greece	52 (29 + 23)	44 (33 + 11)	50 (33 + 17)	49 (37 + 12)	51 (40 + 12)
Lithuania	20 (12 + 8)	29 (23 + 6)	31 (23 + 8)	45 (37 + 8)	42 (35 + 7)
Poland	30 (20 + 10)	31 (26 + 5)	24 (19 + 6)	35 (29 + 6)	36 (30 + 6)
Czech Republic	28 (19 + 9)	35 (27 + 7)	34 (24 + 10)	40 (30 + 10)	40 (31 + 9)
Cyprus	31 (22 + 8)	34 (26 + 8)	34 (26 + 7)	44 (37 + 7)	43 (33 + 10)
Bulgaria	31 (19 + 12)	34 (26 + 8)	35 (25 + 10)	42 (33 + 9)	40 (32 + 8)
Croatia	33 (21 + 11)	40 (32 + 8)	35 (23 + 12)	40 (27 + 13)	44 (33 + 11)
Italy	30 (19 + 11)	27 (23 + 4)	27 (25 + 3)	26 (23 + 3)	29 (25 + 3)
France	27 (16 + 11)	29 (21 + 7)	26 (20 + 6)	34 (25 + 8)	34 (26 + 9)
Romania	26 (16 + 10)	32 (22 + 10)	34 (21 + 13)	39 (27 + 11)	35 (25 + 10)
Estonia	17 (13 + 4)	23 (19 + 4)	28 (24 + 4)	30 (26 + 4)	28 (25 + 4)
Slovakia	23 (17 + 7)	25 (20 + 5)	25 (19 + 6)	29 (25 + 4)	27 (21 + 5)
Austria	35 (20 + 15)	31 (25 + 6)	27 (21 + 6)	33 (25 + 8)	35 (27 + 8)
Germany	21 (16 + 5)	24 (18 + 6)	26 (20 + 5)	29 (24 + 5)	31 (24 + 7)
Spain	28 (16 + 11)	25 (18 + 8)	27 (20 + 8)	28 (19 + 9)	29 (19 + 10)
Hungary	26 (18 + 7)	26 (22 + 4)	25 (20 + 5)	28 (22 + 6)	29 (24 + 5)
The Netherlands	18 (13 + 5)	19 (14 + 5)	22 (17 + 5)	21 (14 + 7)	20 (15 + 5)
Malta	25 (19 + 5)	19 (17 + 2)	18 (16 + 3)	29 (24 + 5)	28 (24 + 4)
Denmark	21 (12 + 9)	24 (16 + 8)	21 (14 + 8)	26 (19 + 8)	28 (19 + 9)
Slovenia	27 (16 + 11)	24 (17 + 7)	24 (18 + 6)	32 (22 + 10)	29 (21 + 9)
Luxembourg	22 (13 + 9)	22 (16 + 7)	20 (14 + 6)	24 (14 + 9)	25 (16 + 9)
Finland	15 (10 + 5)	16 (12 + 3)	16 (10 + 5)	19 (16 + 3)	19 (16 + 3)
UK	14 (10 + 5)	16 (11 + 4)	18 (13 + 5)	20 (17 + 3)	16 (13 + 3)
Belgium	22 (12 + 9)	19 (12 + 6)	17 (10 + 7)	26 (19 + 7)	22 (15 + 6)
Ireland	19 (11 + 8)	17 (12 + 4)	18 (11 + 7)	21 (14 + 7)	20 (14 + 6)
Sweden	10 (2 + 8)	12 (6 + 6)	16 (7 + 8)	14 (6 + 7)	14 (6 + 8)

Appendix B. Proportion of women in the target age range who meet study-specific criteria for lung cancer screening in European countries (sorted from highest to lowest prevalence of current smoking).

Country	Eligible population [%] (current smokers [%] + former smokers [%])				
	NLST	MILD	DANTE	ITALUNG	DLCST
Croatia	20 (17 + 3)	24 (23 + 1)	19 (16 + 3)	26 (24 + 2)	26 (25 + 1)
France	17 (13 + 4)	19 (15 + 4)	24 (19 + 5)	27 (22 + 5)	24 (20 + 4)
Greece	18 (16 + 2)	23 (21 + 2)	22 (19 + 3)	30 (27 + 3)	28 (25 + 3)
Poland	15 (12 + 3)	18 (17 + 1)	19 (18 + 2)	22 (20 + 1)	20 (19 + 1)
Slovenia	14 (11 + 3)	14 (11 + 2)	19 (15 + 4)	21 (17 + 4)	20 (17 + 4)
Bulgaria	10 (9 + 1)	14 (12 + 2)	11 (9 + 2)	15 (13 + 2)	16 (14 + 3)
Spain	5 (3 + 2)	10 (8 + 2)	9 (6 + 2)	14 (11 + 3)	14 (12 + 3)
Austria	20 (17 + 3)	20 (16 + 4)	18 (15 + 3)	24 (22 + 3)	24 (19 + 5)
Germany	12 (9 + 2)	11 (10 + 1)	12 (11 + 1)	14 (13 + 1)	15 (13 + 2)
Hungary	16 (10 + 5)	17 (13 + 4)	16 (11 + 5)	22 (15 + 7)	23 (16 + 7)
UK	15 (9 + 6)	15 (12 + 4)	15 (11 + 4)	15 (10 + 5)	18 (13 + 4)
The Netherlands	13 (8 + 5)	16 (11 + 5)	15 (10 + 4)	18 (13 + 6)	17 (12 + 5)
Denmark	14 (6 + 7)	18 (10 + 9)	18 (8 + 11)	17 (8 + 9)	17 (9 + 8)
Ireland	13 (9 + 4)	14 (11 + 3)	19 (14 + 5)	20 (16 + 4)	18 (14 + 4)
Czech Republic	6 (5 + 2)	11 (9 + 1)	10 (8 + 3)	13 (10 + 3)	12 (10 + 2)
Italy	9 (6 + 2)	12 (11 + 1)	12 (11 + 1)	15 (13 + 2)	13 (11 + 2)
Estonia	6 (5 + 0)	7 (5 + 2)	11 (9 + 1)	11 (9 + 2)	10 (7 + 3)
Slovakia	6 (5 + 1)	9 (7 + 2)	10 (7 + 3)	13 (9 + 3)	10 (8 + 2)
Finland	6 (3 + 3)	9 (7 + 3)	12 (8 + 4)	12 (9 + 3)	13 (9 + 3)
Romania	6 (5 + 1)	9 (9 + 0)	8 (8 + 0)	8 (8 + 0)	9 (9 + 0)
Lithuania	1 (1 + 0)	3 (2 + 0)	2 (2 + 0)	3 (3 + 0)	4 (4 + 0)
Belgium	7 (4 + 3)	12 (9 + 3)	11 (8 + 2)	12 (8 + 4)	15 (11 + 4)
Malta	10 (6 + 4)	9 (8 + 2)	8 (8 + 0)	12 (10 + 2)	12 (10 + 2)
Luxembourg	13 (8 + 6)	8 (5 + 3)	11 (9 + 3)	11 (9 + 2)	9 (6 + 2)
Sweden	7 (3 + 4)	11 (8 + 3)	13 (9 + 5)	14 (11 + 4)	12 (10 + 3)
Latvia	3 (1 + 1)	4 (3 + 2)	4 (3 + 2)	5 (4 + 1)	5 (3 + 2)
Cyprus	5 (5 + 0)	6 (6 + 0)	3 (3 + 0)	8 (8 + 0)	9 (9 + 0)

Appendix C. Estimates of sensitivity and specificity of various smoking-based criteria as a pre-screening test for lung cancer in European countries among men (sorted from highest to lowest prevalence of current smoking).

Country	Current smokers [%]	Sensitivity [%] / Specificity [%]				
		NLST	MILD	DANTE	ITALUNG	DLCST
Latvia	47.6	56 / 73	73 / 56	68 / 62	77 / 56	77 / 55
Greece	44.0	80 / 48	66 / 56	70 / 50	71 / 51	75 / 49
Lithuania	39.2	49 / 80	60 / 71	60 / 69	73 / 55	72 / 58
Poland	36.3	62 / 70	54 / 69	46 / 76	60 / 65	63 / 64
Czech Republic	35.6	68 / 72	73 / 65	73 / 66	78 / 60	79 / 60
Cyprus	35.1	61 / 69	55 / 66	58 / 66	70 / 56	70 / 57
Bulgaria	34.8	64 / 69	67 / 66	65 / 65	73 / 58	74 / 60
Croatia	34.8	66 / 67	69 / 60	63 / 65	73 / 60	77 / 56
Italy	33.8	70 / 70	56 / 73	51 / 73	60 / 74	62 / 71
France	32.8	56 / 73	53 / 71	45 / 74	54 / 66	59 / 66
Romania	32.1	61 / 74	69 / 68	80 / 66	73 / 61	72 / 65
Estonia	31.1	45 / 83	54 / 77	61 / 72	66 / 70	63 / 72
Slovakia	27.9	63 / 77	65 / 75	63 / 75	63 / 71	65 / 73
Austria	27.9	75 / 65	63 / 69	55 / 73	61 / 67	68 / 65
Germany	27.5	58 / 79	55 / 76	62 / 74	67 / 71	66 / 69
Spain	26.0	59 / 72	47 / 75	51 / 73	57 / 72	55 / 71
Hungary	25.5	68 / 74	65 / 74	63 / 75	71 / 72	69 / 71
The Netherlands	24.7	51 / 82	50 / 81	53 / 78	52 / 79	53 / 80
Malta	24.0	57 / 75	43 / 81	40 / 82	58 / 71	55 / 72
Denmark	23.6	56 / 79	54 / 76	54 / 79	62 / 74	64 / 72
Slovenia	23.0	62 / 73	50 / 76	50 / 76	61 / 68	61 / 71
Luxembourg	22.9	60 / 78	60 / 78	53 / 80	61 / 76	60 / 75
Finland	19.9	50 / 85	47 / 84	50 / 84	55 / 81	54 / 81
UK	19.1	53 / 86	49 / 84	57 / 82	61 / 80	57 / 84
Belgium	19.1	55 / 78	47 / 81	44 / 83	55 / 74	53 / 78
Ireland	16.5	52 / 81	46 / 83	45 / 82	55 / 79	54 / 80
Sweden	9.8	35 / 90	33 / 88	38 / 84	40 / 86	42 / 86

Appendix D. Estimates of sensitivity and specificity of various smoking-based criteria as a pre-screening test for lung cancer in European countries among women (sorted from highest to lowest prevalence of current smoking).

Country	Current smokers [%]	Sensitivity [%] / Specificity [%]				
		NLST	MILD	DANTE	ITALUNG	DLCST
Croatia	30.2	67 / 80	68 / 76	64 / 81	71 / 74	70 / 74
France	29.9	55 / 83	60 / 81	64 / 76	68 / 73	64 / 76
Greece	29.1	62 / 82	71 / 77	71 / 78	79 / 70	75 / 72
Poland	26.7	54 / 85	61 / 82	61 / 81	62 / 78	63 / 80
Slovenia	23.0	49 / 86	52 / 86	55 / 81	60 / 79	59 / 80
Bulgaria	22.5	49 / 90	57 / 86	56 / 89	60 / 85	60 / 84
Spain	22.0	33 / 95	45 / 90	42 / 91	52 / 86	50 / 86
Austria	21.5	64 / 80	64 / 80	59 / 82	64 / 76	66 / 76
Germany	21.4	48 / 88	45 / 89	42 / 88	50 / 86	52 / 85
Hungary	20.5	59 / 84	62 / 83	60 / 84	66 / 78	68 / 77
UK	19.2	55 / 85	51 / 85	49 / 85	52 / 85	57 / 82
The Netherlands	19.1	46 / 87	50 / 84	47 / 85	51 / 82	50 / 83
Denmark	18.9	49 / 86	53 / 82	57 / 82	49 / 83	51 / 83
Ireland	18.2	48 / 87	50 / 86	55 / 81	61 / 80	59 / 82
Czech Republic	16.3	32 / 94	44 / 89	44 / 90	48 / 87	44 / 88
Italy	16.1	42 / 91	50 / 88	53 / 88	56 / 85	53 / 87
Estonia	16.0	32 / 94	38 / 93	49 / 89	44 / 89	40 / 90
Slovakia	15.8	34 / 94	41 / 91	45 / 90	51 / 87	44 / 90
Finland	15.2	31 / 94	35 / 91	45 / 88	41 / 88	42 / 87
Romania	15.2	39 / 94	42 / 91	39 / 92	41 / 92	44 / 91
Lithuania	14.8	Sep-99	17 / 97	13 / 98	15 / 97	17 / 96
Belgium	14.3	37 / 93	47 / 88	43 / 89	50 / 88	56 / 85
Malta	13.3	49 / 90	43 / 91	40 / 92	51 / 88	51 / 88
Luxembourg	12.0	58 / 87	44 / 92	57 / 89	52 / 89	45 / 91
Sweden	11.8	27 / 93	34 / 89	37 / 87	41 / 86	36 / 88
Latvia	11.7	19 / 97	25 / 96	25 / 96	29 / 95	27 / 95
Cyprus	11.6	37 / 95	39 / 94	20 / 97	45 / 92	46 / 91