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Appendices

German EstSmoke: Estimating adult smoking-related costs and consequences of smoking cessation for Germany

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Appendix 1: Incidence rate and probability of first-ever acute MI, stroke, lung cancer or COPD in the general German population, by age and sex

Sex	Age groups in years	MI		Stroke		Lung cancer		COPD	
		Incidence per 1,000 inhabitants	1-year probability in the general population[1]	1-year incidence rate of stroke per person	1-year probability in the general population[1]	Incidence per 100,000 person years	1-year probability in the general population[1]	9-year incidence per 1000 person years	1-year probability in the general population[1]
Men	35-39	104	0.00104	0.00014	0.00014	2.47	0.00002	2.6	0.00029
	40-44	104	0.00104	0.00014	0.00014	7.42	0.00007	4.7	0.00052
	45-49	104	0.00104	0.00128	0.00128	24.24	0.00024	4.7	0.00052
	50-54	104	0.00104	0.00128	0.00128	60.33	0.00060	4.7	0.00052
	55-59	503	0.00501	0.00188	0.00188	120.34	0.00120	4.7	0.00052
	60-64	503	0.00501	0.00188	0.00188	176.54	0.00177	4.7	0.00052
	65-69	876	0.00872	0.00610	0.00608	263.97	0.00264	4.7	0.00052
	70-74	876	0.00872	0.00610	0.00608	307.33	0.00307	4.7	0.00052
	75-79	1,295	0.01287	0.01288	0.01280	335.56	0.00336	4.7	0.00052
	80-84	1,735	0.01720	0.01288	0.01280	402.29	0.00402	4.7	0.00052
	85+	2,117	0.02095	0.02415	0.02386	268.45	0.00268	4.7	0.00052
Women	35-39	23	0.00023	0.00029	0.00029	2.38	0.00002	2.6	0.00029
	40-44	23	0.00023	0.00029	0.00029	8.22	0.00008	4.7	0.00052
	45-49	23	0.00023	0.00081	0.00081	19.81	0.00020	4.7	0.00052
	50-54	23	0.00023	0.00081	0.00081	38.65	0.00039	4.7	0.00052
	55-59	23	0.00023	0.00203	0.00203	67.07	0.00067	4.7	0.00052
	60-64	23	0.00023	0.00203	0.00203	82.84	0.00083	4.7	0.00052
	65-69	389	0.00389	0.00437	0.00436	109.74	0.00110	4.7	0.00052
	70-74	389	0.00389	0.00437	0.00436	101.15	0.00101	4.7	0.00052
	75-79	633	0.00631	0.01197	0.01190	103.97	0.00104	4.7	0.00052
	80-84	931	0.00927	0.01197	0.01190	107.59	0.00108	4.7	0.00052
	85+	1,304	0.01296	0.02013	0.01993	91.40	0.00091	4.7	0.00052

[1] One-year probabilities for smoking-related diseases were derived by using the following equation (29): $\text{Probability}_{1-year} = 1 - \exp(-\text{Incidencerate}_{1-year} * 1)$.

Appendix 2a: Age- and sex-specific probability (expressed as percentage chance) of developing first-ever MI-based on smoking status

Sex	Age groups in years	Non-smokers	Smokers	Ex-smokers: time since quitting					
				>1-3 years	>3-5 years	> 5-10 years	> 10-15 years	> 15-20 years	> 20 years
Men	35-39	0.05%	0.16%	0.09%	0.08%	0.08%	0.08%	0.08%	0.07%
	40-44	0.05%	0.16%	0.09%	0.08%	0.08%	0.08%	0.08%	0.07%
	45-49	0.05%	0.16%	0.09%	0.08%	0.08%	0.08%	0.08%	0.07%
	50-54	0.05%	0.16%	0.09%	0.08%	0.08%	0.08%	0.08%	0.07%
	55-59	0.30%	0.75%	0.56%	0.49%	0.49%	0.48%	0.48%	0.43%
	60-64	0.31%	0.78%	0.58%	0.51%	0.51%	0.50%	0.50%	0.44%
	65-69	0.58%	1.47%	1.09%	0.96%	0.96%	0.94%	0.94%	0.84%
	70-74	0.58%	1.47%	1.09%	0.96%	0.96%	0.94%	0.94%	0.84%
	75-79	0.90%	2.26%	1.67%	1.47%	1.47%	1.44%	1.44%	1.29%
	80-84	1.20%	3.02%	2.23%	1.97%	1.97%	1.92%	1.92%	1.72%
	85+	1.46%	3.68%	2.71%	2.39%	2.39%	2.33%	2.33%	2.09%
Women	35-39	0.01%	0.04%	0.02%	0.02%	0.02%	0.02%	0.02%	0.01%
	40-44	0.01%	0.04%	0.02%	0.02%	0.02%	0.02%	0.02%	0.01%
	45-49	0.01%	0.04%	0.02%	0.02%	0.02%	0.02%	0.02%	0.01%
	50-54	0.01%	0.04%	0.02%	0.02%	0.02%	0.02%	0.02%	0.01%
	55-59	0.01%	0.05%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%
	60-64	0.01%	0.05%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%
	65-69	0.32%	0.67%	0.59%	0.52%	0.52%	0.51%	0.51%	0.45%
	70-74	0.32%	0.67%	0.59%	0.52%	0.52%	0.51%	0.51%	0.45%
	75-79	0.54%	1.15%	1.01%	0.89%	0.89%	0.87%	0.87%	0.77%
	80-84	0.79%	1.70%	1.48%	1.30%	1.30%	1.27%	1.27%	1.14%
	85+	1.11%	2.37%	2.06%	1.82%	1.82%	1.78%	1.78%	1.59%

Appendix 2b: Age- and sex-specific probability (expressed as percentage chance) of developing first-ever stroke based on smoking status

Sex	Age groups in years	Non-smokers	Smokers	Ex-smokers: time since quitting					
				>1-3 years	>3-5 years	> 5-10 years	> 10-15 years	> 15-20 years	> 20 years
Men	35-39	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
	40-44	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
	45-49	0.09%	0.18%	0.13%	0.11%	0.11%	0.11%	0.11%	0.06%
	50-54	0.09%	0.18%	0.13%	0.11%	0.11%	0.11%	0.11%	0.06%
	55-59	0.14%	0.29%	0.21%	0.17%	0.17%	0.17%	0.17%	0.09%
	60-64	0.14%	0.29%	0.21%	0.17%	0.17%	0.17%	0.17%	0.09%
	65-69	0.50%	1.00%	0.73%	0.59%	0.59%	0.59%	0.59%	0.31%
	70-74	0.50%	1.00%	0.73%	0.59%	0.59%	0.59%	0.59%	0.31%
	75-79	1.11%	2.22%	1.63%	1.32%	1.32%	1.32%	1.32%	0.65%
	80-84	1.11%	2.22%	1.63%	1.32%	1.32%	1.32%	1.32%	0.65%
	85+	2.06%	4.14%	3.04%	2.47%	2.47%	2.47%	2.47%	1.22%
Women	35-39	0.02%	0.05%	0.03%	0.03%	0.03%	0.03%	0.03%	0.06%
	40-44	0.02%	0.05%	0.03%	0.03%	0.03%	0.03%	0.03%	0.06%
	45-49	0.05%	0.13%	0.10%	0.08%	0.08%	0.08%	0.08%	0.11%
	50-54	0.05%	0.13%	0.10%	0.08%	0.08%	0.08%	0.08%	0.11%
	55-59	0.14%	0.37%	0.27%	0.22%	0.22%	0.22%	0.22%	0.56%
	60-64	0.14%	0.37%	0.27%	0.22%	0.22%	0.22%	0.22%	0.56%
	65-69	0.36%	0.94%	0.69%	0.56%	0.56%	0.56%	0.56%	1.24%
	70-74	0.36%	0.94%	0.69%	0.56%	0.56%	0.56%	0.56%	1.24%
	75-79	1.07%	2.77%	2.03%	1.64%	1.64%	1.64%	1.64%	2.73%
	80-84	1.07%	2.77%	2.03%	1.64%	1.64%	1.64%	1.64%	2.73%
	85+	1.79%	4.65%	3.41%	2.76%	2.76%	2.76%	2.76%	3.08%

Appendix 2c: Age- and sex-specific probability (expressed as percentage chance) of developing lung cancer based on smoking status

Sex	Age groups in years	Non-smokers	Smokers	Ex-smokers: time since quitting		
				2-5 years	6-10 years	26-35 years
Men	35-39	0.00%	0.01%	0.00%	0.00%	0.00%
	40-44	0.00%	0.02%	0.01%	0.01%	0.00%
	45-49	0.00%	0.05%	0.04%	0.02%	0.01%
	50-54	0.01%	0.14%	0.10%	0.06%	0.02%
	55-59	0.02%	0.37%	0.28%	0.17%	0.04%
	60-64	0.02%	0.54%	0.41%	0.24%	0.07%
	65-69	0.05%	1.14%	0.88%	0.52%	0.14%
	70-74	0.06%	1.33%	1.02%	0.60%	0.16%
	75-79	0.08%	1.99%	1.52%	0.90%	0.24%
	80-84	0.10%	2.38%	1.82%	1.08%	0.29%
	85+	0.07%	1.59%	1.22%	0.72%	0.20%
Women	35-39	0.00%	0.00%	0.00%	0.00%	0.00%
	40-44	0.00%	0.01%	0.01%	0.01%	0.00%
	45-49	0.00%	0.03%	0.03%	0.02%	0.00%
	50-54	0.01%	0.06%	0.05%	0.03%	0.01%
	55-59	0.02%	0.12%	0.11%	0.06%	0.02%
	60-64	0.02%	0.15%	0.13%	0.08%	0.02%
	65-69	0.04%	0.28%	0.24%	0.14%	0.04%
	70-74	0.03%	0.25%	0.22%	0.13%	0.03%
	75-79	0.04%	0.30%	0.25%	0.15%	0.04%
	80-84	0.04%	0.31%	0.26%	0.16%	0.04%
	85+	0.03%	0.26%	0.22%	0.13%	0.03%

Appendix 2d: Age- and sex-specific probability (expressed as percentage chance) of developing COPD based on smoking status

Sex	Age groups in years	Non-smokers	Smokers	Ex-smokers
Men	35-39	0.01%	0.05%	0.01%
	40-44	0.02%	0.10%	0.02%
	45-49	0.02%	0.10%	0.02%
	50-54	0.02%	0.10%	0.02%
	55-59	0.02%	0.13%	0.03%
	60-64	0.02%	0.13%	0.03%
	65-69	0.03%	0.16%	0.04%
	70-74	0.03%	0.16%	0.04%
	75-79	0.03%	0.20%	0.04%
	80-84	0.03%	0.20%	0.04%
	85+	0.03%	0.20%	0.04%
Women	35-39	0.02%	0.05%	0.02%
	40-44	0.03%	0.09%	0.03%
	45-49	0.03%	0.09%	0.03%
	50-54	0.03%	0.09%	0.03%
	55-59	0.03%	0.11%	0.04%
	60-64	0.03%	0.11%	0.04%
	65-69	0.04%	0.13%	0.05%
	70-74	0.04%	0.13%	0.05%
	75-79	0.05%	0.14%	0.05%
	80-84	0.05%	0.14%	0.05%
	85+	0.05%	0.14%	0.05%

Appendix 3: Age- and sex-specific rates of mortality due to fatal events and other diseases

Sex	Age Groups	MI	Stroke	Lung Cancer[2]	COPD[2]	Other Diseases[3]
Men	35-39	0.315	0.194	0.007	0.00004	0.001
	40-44	0.221	0.194	0.007	0.00004	0.001
	45-49	0.254	0.194	0.021	0.00004	0.002
	50-54	0.262	0.194	0.021	0.00004	0.003
	55-59	0.284	0.194	0.077	0.00004	0.005
	60-64	0.422	0.194	0.077	0.00004	0.007
	65-69	0.450	0.194	0.156	0.00004	0.011
	70-74	0.543	0.194	0.156	0.00004	0.015
	75-79	0.543	0.194	0.206	0.00004	0.026
	80-84	0.543	0.194	0.206	0.00004	0.047
	85+	0.543	0.194	0.206	0.00004	0.086
Women	35-39	0.245	0.194	0.007	0.00013	0.000
	40-44	0.294	0.194	0.007	0.00013	0.001
	45-49	0.200	0.194	0.014	0.00013	0.001
	50-54	0.268	0.194	0.014	0.00013	0.002
	55-59	0.378	0.194	0.042	0.00013	0.003
	60-64	0.294	0.194	0.042	0.00013	0.004
	65-69	0.388	0.194	0.056	0.00013	0.007
	70-74	0.543	0.194	0.056	0.00013	0.011
	75-79	0.543	0.194	0.063	0.00013	0.020
	80-84	0.543	0.194	0.063	0.00013	0.041
	85+	0.543	0.194	0.063	0.00013	0.083

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[2] We followed Tammemagi et al. (55) and Keistinen et al. (56) to rescale the probability of death from lung cancer and COPD.

[3] Without MI, stroke, lung cancer and COPD.

Appendix 4: Distribution of health care costs associated with MI, stroke, lung cancer and COPD