

Table S1 Trends in deaths attributable to smoking-related atrial fibrillation and atrial flutter (AF/AFL) in G20 countries from 1990 to 2021, including the number of deaths, age-standardized death rates (per 100,000 population), and estimated annual percentage changes (EAPCs), based on data from the Global Burden of Disease Study 2021

	Deaths				
	Number of Deaths cases (95% UI) in 1990	The age- standardized Deaths rate/100000 (95% UI) in 1990	Number of Deaths cases (95% UI) in 2021	The age- standardized Deaths rate/100000 (95% UI) in 2021	EAPC (95% CI)
G20	3910.44 (2303.89-5614.18)	0.16 (0.09-0.23)	8102.87 (4749.03-11785.58)	0.13 (0.07-0.18)	0.31 (0-0.62)
Argentina	24.07 (14.57-36.33)	0.08 (0.05-0.12)	40.12 (23.28-62.46)	0.07 (0.04-0.11)	0.87 (0.52-1.23)
Australia	31.03 (18.5-46.12)	0.17 (0.1-0.25)	51.78 (28.27-80.67)	0.1 (0.06-0.15)	-0.52 (-1.16-0.12)
Brazil	142.45 (86.5-207.22)	0.23 (0.13-0.35)	285.7 (167.14-430.58)	0.12 (0.07-0.18)	-0.82 (-1.47--0.17)
Canada	67.55 (39.66-100.09)	0.21 (0.12-0.32)	96.41 (53.25-149.45)	0.12 (0.07-0.18)	-1.14 (-1.82--0.46)
China	935.68 (521.47-1434.38)	0.21 (0.12-0.33)	2681.73 (1472.27-4093.2)	0.16 (0.09-0.25)	0.8 (0.01-1.61)
European Union	1069.81 (641.01-1579.39)	0.18 (0.11-0.27)	1545.96 (900.71-2319.07)	0.13 (0.08-0.2)	0.29 (-0.59-1.18)
France	148.67 (86.25-230.25)	0.17 (0.1-0.26)	190.91 (104.39-298.68)	0.11 (0.06-0.17)	-0.52 (-1.45-0.42)
Germany	275.49 (154.09-409.06)	0.21 (0.12-0.31)	468.58 (263.84-715.93)	0.2 (0.11-0.3)	1.37 (0.34-2.42)
India	285.1 (136.26-468.67)	0.09 (0.05-0.16)	942.79 (530.27-1429.82)	0.11 (0.06-0.16)	1.59 (0.46-2.73)
Indonesia	88.73 (50.45-137.06)	0.15 (0.08-0.24)	315.42 (179.49-486.44)	0.25 (0.13-0.39)	2.16 (0.85-3.49)
Italy	118.65 (68.56-175.46)	0.14 (0.08-0.21)	180.67 (99.87-280.61)	0.1 (0.06-0.15)	0.31 (-0.79-1.43)
Japan	255.34 (158.07-367.26)	0.16 (0.1-0.24)	340.57 (194.72-513.04)	0.08 (0.04-0.11)	-1.84 (-2.99--0.69)
Mexico	69.87 (41.45-102.8)	0.25 (0.14-0.37)	112.66 (66.51-166.23)	0.1 (0.06-0.15)	-1.56 (-2.47--0.64)
Republic of Korea	36 (20.96-57.63)	0.18 (0.1-0.29)	129.01 (67.72-207.66)	0.14 (0.07-0.23)	1.56 (0.96-2.16)
Russian Federation	117.8 (66.19-176.43)	0.07 (0.04-0.11)	243.8 (149.85-354.82)	0.1 (0.06-0.15)	1.83 (1.35-2.32)
Saudi Arabia	1.22 (0.67-1.99)	0.03 (0.01-0.04)	5.16 (2.67-8.05)	0.03 (0.02-0.05)	1.26 (-0.24-2.78)

South Africa	21.14 (12.2-32.28)	0.13 (0.07-0.2)	28.8 (16.54-42.9)	0.08 (0.04-0.12)	-1.31 (-2.19--0.43)
Turkey	31.1 (16.98-50.23)	0.11 (0.06-0.18)	64.75 (36.45-100.5)	0.08 (0.04-0.12)	-0.15 (-0.76-0.46)
United Kingdom	267.23 (162.29-390.92)	0.28 (0.17-0.41)	278.51 (157.35-441.42)	0.18 (0.1-0.28)	-0.86 (-1.77-0.06)
United States of America	466.3 (275.67-697.75)	0.14 (0.08-0.21)	939.69 (536.42-1438.74)	0.15 (0.09-0.23)	0.7 (0.1-1.3)

1 **Note:** Data are presented as number of cases (95% uncertainty interval) and age-standardized rates per 100,000 population (95% UI). EAPC = estimated annual percentage change.

Table S2 Trends in years lived with disability (YLDs) attributable to smoking-related atrial fibrillation and atrial flutter (AF/AFL) in G20 countries from 1990 to 2021, including the number of YLD cases, age-standardized YLD rates (per 100,000 population), and estimated annual percentage changes (EAPCs), based on data from the Global Burden of Disease Study 2021

	YLDs		The age-standardized		EAPC (95% CI)
	Number of YLDs cases (95% UI) in 1990	YLDs rate/100000 (95% UI) in 1990	Number of YLDs cases (95% UI) in 2021	YLDs rate/100000 (95% UI) in 2021	
G20	108216.23 (57638.88-176505.38)	3.54 (1.88-5.74)	189297.95 (102821.7-303660.85)	2.88 (1.57-4.61)	0.14 (-0.06-0.35)
Argentina	738.88 (362.74-1225.57)	2.26 (1.11-3.76)	862.72 (465.81-1467.2)	1.6 (0.86-2.72)	-0.86 (-1.02--0.69)
Australia	917.52 (510.67-1485.15)	4.76 (2.65-7.66)	1109.27 (568.63-1849.8)	2.77 (1.41-4.66)	-1.13 (-1.55--0.72)
Brazil	4798.49 (2455.98-7820.58)	5.25 (2.74-8.53)	7097.96 (3562.68-11675.34)	2.78 (1.4-4.58)	-1.07 (-1.42--0.72)
Canada	2114.88 (1098.45-3570.63)	6.48 (3.38-10.89)	2434.27 (1224.49-4122.56)	3.5 (1.77-5.87)	-1.25 (-1.81--0.68)
China	26200 (13621.74-41347.27)	3.15 (1.66-5)	71233.57 (37161.84-114970.05)	3.27 (1.72-5.31)	1.71 (1.36-2.07)
European Union	26794.3 (14243.31-44076.17)	4.59 (2.45-7.45)	33440.65 (18174.89-54353.49)	3.98 (2.16-6.39)	-0.09 (-0.74-0.57)

France	3368.08 (1716-5613.52)	4.29 (2.19-7.06)	3942.01 (2034.51-6745.57)	3.37 (1.72-5.67)	-0.42 (-1.03-0.18)
Germany	6437.29 (3288.6-10683.19)	5.3 (2.7-8.7)	9173.25 (4974.21-14769.62)	5.68 (3.07-9.26)	0.48 (-0.28-1.25)
India	9763.16 (5249.07-15891.08)	2.33 (1.25-3.85)	17706.03 (9162.3-29809.71)	1.56 (0.8-2.64)	-0.48 (-1.18-0.22)
Indonesia	3461.88 (1826.17-5538.85)	3.64 (1.92-5.8)	9637.55 (5079.11-15612.1)	3.96 (2.09-6.38)	1.09 (0.46-1.73)
Italy	4278.92 (2220.56-7077.14)	4.96 (2.58-8.19)	4146.87 (2108.05-7109.43)	3.22 (1.65-5.34)	-1.02 (-1.79--0.24)
Japan	6620.41 (3423.42-10692.94)	3.84 (1.99-6.19)	5487.73 (2790.24-9296.91)	2.01 (1.05-3.33)	-1.59 (-2.38--0.79)
Mexico	1508.25 (800.9-2455.14)	3.62 (1.95-5.89)	2585.43 (1327.31-4318.63)	2.02 (1.04-3.38)	-0.87 (-1.47--0.26)
Republic of Korea	1330.9 (692.71-2176.75)	4.09 (2.14-6.53)	3146.02 (1698.84-5182.92)	3.56 (1.9-5.88)	0.99 (0.56-1.41)
Russian Federation	5211.98 (2728.7-8216.78)	2.84 (1.49-4.49)	7921.12 (4113.13-12671.1)	3.41 (1.79-5.49)	1.14 (0.63-1.66)
Saudi Arabia	35.99 (16.94-62.96)	0.55 (0.26-0.95)	208.28 (96.93-356.8)	0.83 (0.41-1.38)	2.06 (1.1-3.03)
South Africa	549.12 (283.69-886.54)	2.71 (1.39-4.38)	692.85 (354.8-1134.5)	1.43 (0.73-2.38)	-1.43 (-2.02--0.84)
Turkey	594.58 (305.42-982.7)	1.68 (0.87-2.77)	1145.01 (625.86-1874.07)	1.21 (0.66-1.95)	-0.43 (-0.8--0.06)
United Kingdom	3844.92 (2015.34-6517.1)	4.35 (2.3-7.22)	3471.66 (1825.64-5803.72)	2.87 (1.48-4.72)	-1.37 (-2.02--0.72)

United States of America	13730.99 (7055-22769.43)	4.43 (2.29- 7.29)	21117.84 (11806.65-34408.19)	3.71 (2.05- 6.01)	0 (-0.46-0.47)
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3 Note: Data are presented as number of cases (95% uncertainty interval) and age-standardized rates per 100,000 population (95% UI). EAPC = estimated annual percentage change.

Table S3 Trends in years of life lost (YLLs) attributable to smoking-related atrial fibrillation and atrial flutter (AF/AFL) in G20 countries from 1990 to 2021, including the number of YLL cases, age-standardized YLL rates (per 100,000 population), and estimated annual percentage changes (EAPCs), based on data from the Global Burden of Disease Study 2021

	YLLs		Number of YLLs cases (95% UI) in 2021	The age-standardized YLLs rate/100000 (95% UI) in 2021	EAPC (95% CI)
	Number of YLLs cases (95% UI) in 1990	The age-standardized YLLs rate/100000 (95% UI) in 1990			
G20	72496.8 (43059.32-101327.31)	2.63 (1.56-3.73)	132463.93 (78787.59-189831.89)	2.04 (1.22-2.93)	0.09 (-0.15-0.33)
Argentina	507.45 (313.01-719.83)	1.61 (1-2.34)	748.03 (450-1101.24)	1.34 (0.81-1.96)	0.52 (0.2-0.83)
Australia	560.19 (342.08-810.62)	2.91 (1.78-4.22)	784.34 (450.91-1187.44)	1.67 (0.98-2.49)	-0.9 (-1.46--0.34)
Brazil	2777.94 (1734.13-3935.67)	3.62 (2.21-5.22)	5020.35 (2968.13-7408.13)	2.04 (1.2-3)	-0.91 (-1.41--0.41)
Canada	1121.15 (687.13-1610.22)	3.49 (2.13-5.04)	1430.55 (850.67-2143.73)	1.89 (1.14-2.8)	-1.28 (-1.9--0.66)
China	17981.87 (10361.87-27337.68)	3.04 (1.71-4.7)	42267.04 (23274.84-64014.8)	2.24 (1.24-3.37)	0.54 (0-1.09)
European Union	18600.84 (11454.58-26530.62)	3.15 (1.94-4.48)	23338.95 (13909.81-34145.86)	2.32 (1.41-3.33)	0.12 (-0.67-0.91)

France	2386.64 (1456.58-3509.34)	2.83 (1.74-4.1)	2883.2 (1660.05-4286.66)	1.99 (1.19-2.86)	-0.37 (-1.16-0.41)
Germany	4624.02 (2719.92-6772.48)	3.63 (2.14-5.26)	6756.38 (3977.21-10036.46)	3.24 (1.95-4.71)	1.13 (0.19-2.08)
India	6257.84 (2995.8-10217.89)	1.62 (0.77-2.65)	17054.94 (9621.34-25312.39)	1.66 (0.93-2.47)	1.01 (0.17-1.86)
Indonesia	1823.9 (1095.94-2670.7)	2.29 (1.31-3.51)	5991.87 (3473.26-8937.17)	3.47 (1.96-5.38)	1.83 (0.88-2.8)
Italy	2048.14 (1222.76-2914.11)	2.4 (1.43-3.4)	2555.25 (1484.42-3794.96)	1.62 (0.98-2.37)	0.02 (-0.95-1)
Japan	4768.98 (3042.43-6687.78)	2.87 (1.83-4.04)	5110.16 (2999.63-7439.96)	1.45 (0.86-2.04)	-1.99 (-2.97--1)
Mexico	1212.66 (745.39-1724.64)	3.54 (2.13-5.11)	2011.45 (1208.22-2911.93)	1.66 (1-2.43)	-1.3 (-2.05--0.54)
Republic of Korea	816.82 (482.32-1265.96)	3.07 (1.78-4.91)	1956.86 (1065.95-3012.2)	2.11 (1.14-3.25)	0.55 (0.11-1)
Russian Federation	2637.8 (1467.42-3956.98)	1.49 (0.83-2.25)	5064.46 (3183.99-7176.62)	2.11 (1.34-2.97)	1.64 (1.13-2.16)
Saudi Arabia	30.54 (16.9-48.87)	0.51 (0.28-0.83)	162.52 (83.58-256.19)	0.67 (0.35-1.07)	1.83 (0.77-2.91)
South Africa	445.52 (268.81-641.69)	2.23 (1.33-3.3)	694.3 (408.72-1013.61)	1.51 (0.87-2.22)	-0.79 (-1.43--0.15)
Turkey	667.37 (363.06-1062.4)	2.03 (1.1-3.25)	1180.02 (671.01-1783.75)	1.32 (0.75-2.01)	-0.69 (-1.17--0.2)
United Kingdom	4091.71 (2523.99-5865.65)	4.39 (2.72-6.26)	3905.4 (2295.1-5989.88)	2.75 (1.64-4.15)	-1.04 (-1.85--0.22)

United States of America	8194.22 (5010.6-11954.85)	2.57 (1.57-3.74)	15742.71 (9243.79-23035.51)	2.67 (1.59- 3.87)	0.61 (0.09-1.14)
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5 Note: Data are presented as number of cases (95% uncertainty interval) and age-standardized rates per 100,000 population (95% UI). EAPC = estimated annual percentage change.

Table S4 Trends in deaths attributable to smoking-related atrial fibrillation and atrial flutter (AF/AFL) stratified by sex and age group in G20 countries from 1990 to 2021, including the number of deaths, age-standardized death rates (per 100,000 population), and estimated annual percentage changes (EAPCs), based on data from the Global Burden of Disease Study 2021

Deaths					
	Number of Deaths cases (95% UI) in 1990	The age- standardized Deaths rate/100000 (95% UI) in 1990	Number of Deaths cases (95% UI) in 2021	The age- standardized Deaths rate/100000 (95% UI) in 2021	EAPC (95% CI)
Sex					
Both	3910.44 (2303.89-5614.18)	0.16 (0.09-0.23)	8102.87 (4749.03-11785.58)	0.13 (0.07-0.18)	-0.79 (-0.84--0.75)
Female	1279.96 (746.42-1888.8)	0.09 (0.05-0.13)	2337.25 (1311.49-3528.4)	0.06 (0.03-0.09)	-1.3 (-1.42--1.18)
Male	2630.48 (1534.11-3733.24)	0.28 (0.16-0.4)	5765.62 (3422.9-8370.89)	0.22 (0.13-0.32)	-0.74 (-0.78--0.7)
Age					
30-34 years	7.57 (4.7-10.47)	0 (0-0)	7.89 (4.83-11.16)	0 (0-0)	-0.81 (-0.94--0.69)
35-39 years	11.14 (7.11-15.27)	0 (0-0.01)	11.76 (7.27-16.52)	0 (0-0)	-0.97 (-1.06--0.88)
40-44 years	31.06 (19.29-42.4)	0.01 (0.01-0.02)	34.99 (22.12-47.77)	0.01 (0.01-0.01)	-1.31 (-1.43--1.18)

45-49 years	64.07 (39.58-88.46)	0.04 (0.02-0.05)	82.69 (50.49-115.54)	0.03 (0.02-0.04)	-1.27 (-1.41--1.13)
50-54 years	131.14 (80.95-180.86)	0.08 (0.05-0.11)	186 (112.7-259.87)	0.06 (0.04-0.08)	-1.15 (-1.25--1.05)
55-59 years	212.42 (132.41-290.53)	0.15 (0.09-0.21)	336.85 (206.14-460.22)	0.12 (0.07-0.16)	-0.75 (-0.8--0.69)
60-64 years	305.79 (189.15-420.66)	0.25 (0.15-0.34)	441.99 (272.63-611.04)	0.19 (0.12-0.26)	-0.84 (-0.9--0.79)
65-69 years	371.63 (225.98-514)	0.39 (0.24-0.54)	602.21 (366.48-844.14)	0.28 (0.17-0.4)	-0.97 (-1.02--0.92)
70-74 years	479.62 (281.54-674.12)	0.73 (0.43-1.03)	913.09 (540.94-1316.27)	0.56 (0.33-0.81)	-0.9 (-0.94--0.86)
75-79 years	608.45 (354.46-874.36)	1.25 (0.73-1.79)	1050.43 (609.35-1530.53)	1.01 (0.59-1.47)	-0.72 (-0.75--0.69)
80-84 years	696.82 (392.29-1054.89)	2.47 (1.39-3.74)	1430.7 (823.09-2175.26)	2.05 (1.18-3.11)	-0.65 (-0.72--0.58)
85-89 years	567.75 (314.29-882.56)	4.75 (2.63-7.38)	1464.07 (796.88-2244.44)	3.93 (2.14-6.03)	-0.68 (-0.77--0.58)
90-94 years	332.43 (183.86-516.01)	9.77 (5.4-15.16)	1147.49 (607-1759.51)	7.77 (4.11- 11.91)	-0.82 (-0.9--0.75)
95+ years	90.55 (48.68-139.89)	11.44 (6.15- 17.67)	392.7 (204.92-611.56)	8.81 (4.6-13.72)	-0.97 (-1.11--0.83)

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Note: Data are presented as number of cases (95% uncertainty interval) and age-standardized rates per 100,000 population (95% UI). EAPC = estimated annual percentage change.

Table S5 Trends in years lived with disability (YLDs) attributable to smoking-related atrial fibrillation and atrial flutter (AF/AFL) stratified by sex and age group in G20 countries from 1990 to 2021, including the number of YLD cases, age-standardized YLD rates (per 100,000 population), and estimated annual percentage changes (EAPCs), based on data from the Global Burden of Disease Study 2021

YLDs					
	Number of YLDs cases (95% UI) in 1990	The age-standardized YLDs rate/100000 (95% UI) in 1990	Number of YLDs cases (95% UI) in 2021	The age-standardized YLDs rate/100000 (95% UI) in 2021	EAPC (95% CI)
Sex					
Both	108216.23 (57638.88-176505.38)	3.54 (1.88-5.74)	189297.95 (102821.7-303660.85)	2.88 (1.57-4.61)	-0.64 (-0.67--0.6)
Female	21438.01 (11122.79-36537.25)	1.31 (0.68-2.24)	32710.38 (17423.88-54113.5)	0.93 (0.5-1.53)	-1.16 (-1.2--1.12)
Male	86778.21 (45975.51-140172.92)	6.23 (3.31-10.11)	156587.58 (84876.54-252304.66)	5.06 (2.75-8.12)	-0.62 (-0.66--0.58)
Age					
30-34 years	353.59 (148.14-717.27)	0.13 (0.05-0.26)	368.13 (153.33-701.7)	0.1 (0.04-0.18)	-0.91 (-0.95--0.86)
35-39 years	2100.33 (869.73-4279.67)	0.8 (0.33-1.64)	2216.52 (981.81-4327.31)	0.61 (0.27-1.19)	-0.98 (-1.08--0.88)
40-44 years	4681.41 (2178.32-8867.32)	2.17 (1.01-4.12)	5452.04 (2600.66-10019.91)	1.65 (0.79-3.04)	-0.86 (-1--0.71)
45-49 years	7012.48 (3421.89-12405.75)	4.06 (1.98-7.18)	10589.42 (5269.25-18542.52)	3.22 (1.6-5.64)	-0.67 (-0.81--0.52)

50-54 years	10539.37 (5062.61-17994.69)	6.62 (3.18-11.31)	17874.7 (8469.31-30470.12)	5.57 (2.64-9.49)	-0.44 (-0.54-- 0.34)
55-59 years	13581.45 (6846.47-23113.92)	9.63 (4.85-16.39)	24798.51 (12729.3-41032.81)	8.51 (4.37-14.09)	-0.24 (-0.33-- 0.16)
60-64 years	16513.57 (8430.39-27995.18)	13.42 (6.85- 22.75)	26738.66 (13594.02-44653.96)	11.38 (5.79- 19.01)	-0.41 (-0.47-- 0.34)
65-69 years	17374.58 (8766.75-28801.35)	18.09 (9.13- 29.99)	31476.64 (16461.85-51299.42)	14.86 (7.77- 24.22)	-0.6 (-0.67--0.52)
70-74 years	14280.23 (7167.2-24414.55)	21.76 (10.92- 37.21)	28301.76 (14540.26-48068.38)	17.47 (8.97- 29.67)	-0.74 (-0.8--0.67)
75-79 years	11613.37 (5980.7-20148.35)	23.8 (12.26- 41.29)	19853.79 (10310.36-34429.53)	19.11 (9.92- 33.14)	-0.79 (-0.85-- 0.74)
80-84 years	6372.63 (3143.48-11878.15)	22.59 (11.14- 42.1)	12337.25 (6296.22-22570.69)	17.65 (9.01- 32.28)	-0.93 (-0.98-- 0.88)
85-89 years	2861.49 (1412.72-5151.51)	23.92 (11.81- 43.05)	6540.56 (3261.89-11665.3)	17.56 (8.76- 31.32)	-1.17 (-1.23-- 1.11)
90-94 years	784.07 (378.72-1391.09)	23.04 (11.13- 40.88)	2276.9 (1121.3-3963.14)	15.41 (7.59- 26.82)	-1.48 (-1.54-- 1.42)
95+ years	147.66 (67.25-271.39)	18.65 (8.5-34.29)	473.07 (208.91-826.29)	10.61 (4.69- 18.53)	-2 (-2.07--1.92)

Table S6 Trends in years of life lost (YLLs) attributable to smoking-related atrial fibrillation and atrial flutter (AF/AFL) stratified by sex and age group in G20 countries from 1990 to 2021, including the number of YLL cases, age-standardized YLL rates (per 100,000 population), and estimated annual percentage changes (EAPCs), based on data from the Global Burden of Disease Study 2021

YLLs					
	Number of YLLs cases (95% UI) in 1990	The age- standardized YLLs rate/100000 (95% UI) in 1990	Number of YLLs cases (95% UI) in 2021	The age- standardized YLLs rate/100000 (95% UI) in 2021	EAPC (95% CI)
Sex					
Both	72496.8 (43059.32- 101327.31)	2.63 (1.56-3.73)	132463.93 (78787.59- 189831.89)	2.04 (1.22-2.93)	-0.84 (-0.88-- 0.81)
Female	20323.65 (11926.49- 29623.22)	1.33 (0.78-1.93)	33145.85 (19203.93-49198.69)	0.9 (0.52-1.33)	-1.28 (-1.37-- 1.18)
Male	52173.15 (31087.17- 72611.28)	4.46 (2.59-6.3)	99318.08 (59637.73-141844.07)	3.5 (2.1-5.02)	-0.8 (-0.83--0.77)
Age					
30-34 years	436.86 (271.37-604.19)	0.16 (0.1-0.22)	455.49 (278.9-644.09)	0.12 (0.07-0.17)	-0.82 (-0.94-- 0.69)
35-39 years	587.93 (375.46-805.57)	0.23 (0.14-0.31)	620.45 (383.72-871.83)	0.17 (0.11-0.24)	-0.97 (-1.07-- 0.88)
40-44 years	1487.02 (923.36-2029.56)	0.69 (0.43-0.94)	1674.09 (1057.99-2285.06)	0.51 (0.32-0.69)	-1.31 (-1.43-- 1.19)
45-49 years	2749.72 (1698.77-3795.76)	1.59 (0.98-2.2)	3549.94 (2167.29-4959.8)	1.08 (0.66-1.51)	-1.28 (-1.42-- 1.13)

50-54 years	5004.08 (3089.21-6901.29)	3.15 (1.94-4.34)	7099.14 (4301.69-9918.92)	2.21 (1.34-3.09)	-1.15 (-1.26-- 1.05)
55-59 years	7109.45 (4431.07-9724.17)	5.04 (3.14-6.9)	11285.52 (6905.96-15419.12)	3.87 (2.37-5.29)	-0.75 (-0.8--0.69)
60-64 years	8824.54 (5458.29-12139.32)	7.17 (4.44-9.87)	12753.27 (7866.9-17631.63)	5.43 (3.35-7.51)	-0.84 (-0.89-- 0.79)
65-69 years	9033.63 (5492.94-12493.21)	9.41 (5.72-13.01)	14630.85 (8904.58-20509.7)	6.91 (4.2-9.68)	-0.97 (-1.02-- 0.91)
70-74 years	9588.62 (5628.16-13478.69)	14.61 (8.58-20.54)	18237.76 (10806.43-26290.83)	11.26 (6.67-16.23)	-0.91 (-0.94-- 0.87)
75-79 years	9708.62 (5654.63-13948.5)	19.9 (11.59-28.58)	16758.2 (9720.16-24411.29)	16.13 (9.36-23.5)	-0.73 (-0.76--0.7)
80-84 years	8718.82 (4907.56-13200.23)	30.9 (17.4-46.79)	17831.48 (10255.94-27109.12)	25.51 (14.67- 38.78)	-0.66 (-0.73-- 0.59)
85-89 years	5642.17 (3122.69-8769.76)	47.15 (26.1-73.29)	14484.67 (7883.69-22204.76)	38.89 (21.16- 59.61)	-0.69 (-0.78--0.6)
90-94 years	2867.01 (1585.65-4450.14)	84.25 (46.59- 130.77)	9892 (5232.74-15166.82)	66.95 (35.42- 102.65)	-0.83 (-0.9--0.75)
95+ years	738.34 (396.89-1140.03)	93.28 (50.14- 144.02)	3191.06 (1665.9-4971.95)	71.57 (37.36- 111.5)	-0.99 (-1.13-- 0.85)

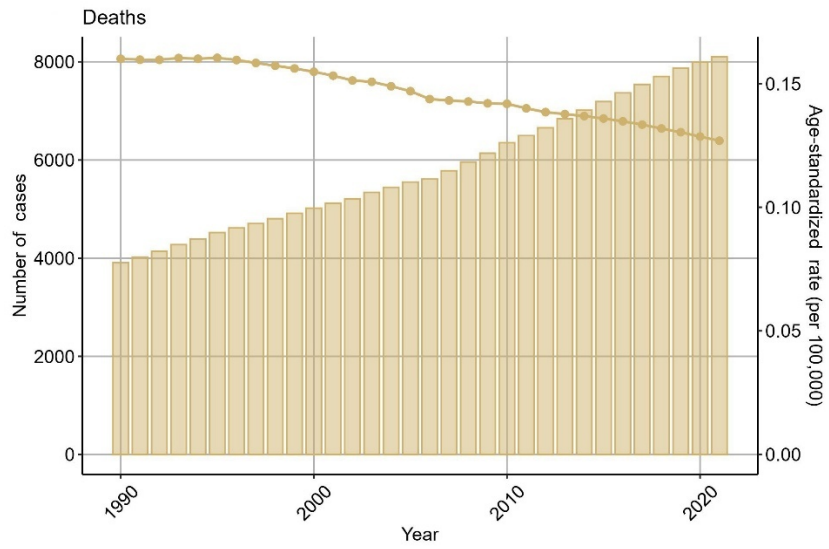


Figure S1. Trends in deaths and age-standardized mortality rates of atrial fibrillation and atrial flutter attributable to smoking in G20 countries, 1990 – 2021.

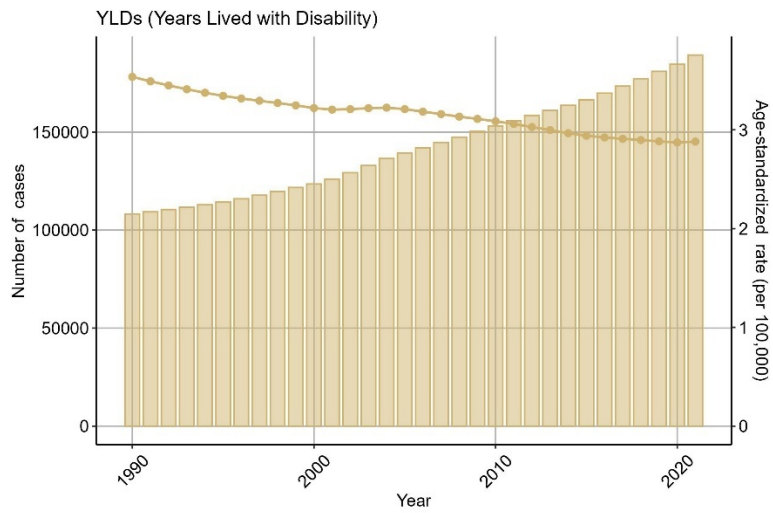


Figure S2. Trends in years lived with disability (YLDs) and age-standardized YLD rates of atrial fibrillation and atrial flutter attributable to smoking in G20 countries, 1990 – 2021.

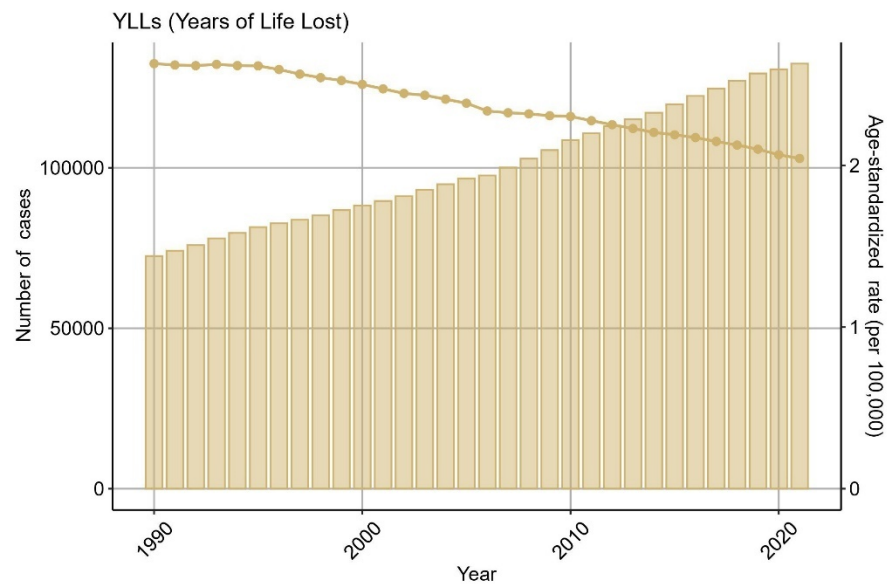


Figure S3. Trends in years of life lost (YLLs) and age-standardized YLL rates of atrial fibrillation and atrial flutter attributable to smoking in G20 countries, 1990–2021.

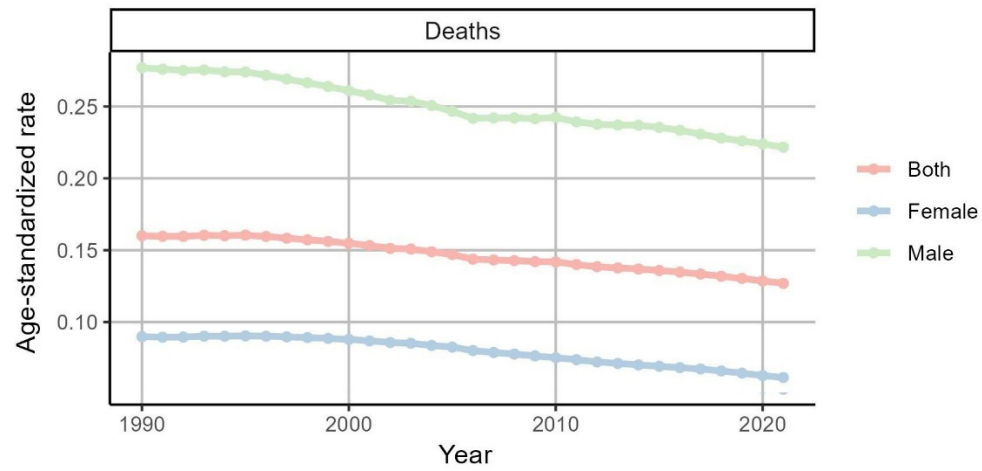


Figure S4. Trends in age-standardized mortality rates of atrial fibrillation and atrial flutter attributable to smoking in G20 countries by sex, 1990 - 2021.

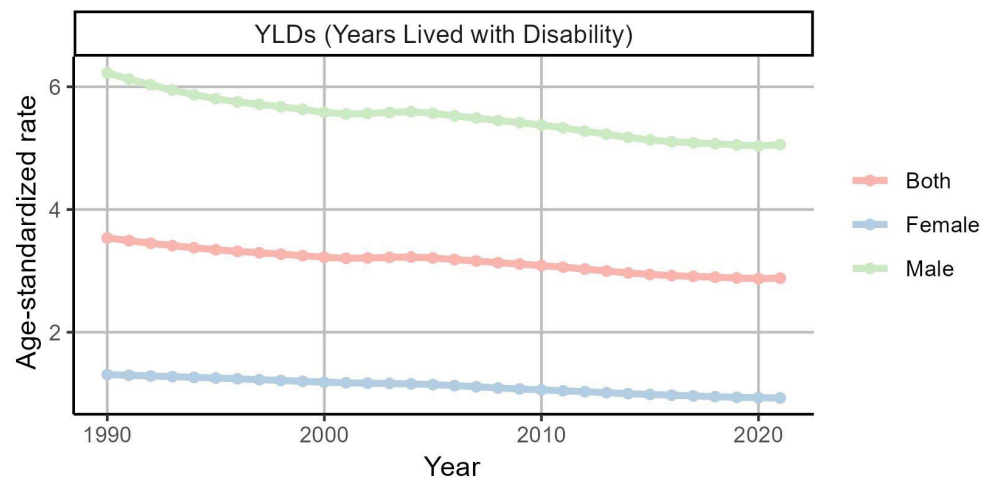


Figure S5. Trends in age-standardized YLD rates of atrial fibrillation and atrial flutter attributable to smoking in G20 countries by sex, 1990–2021.

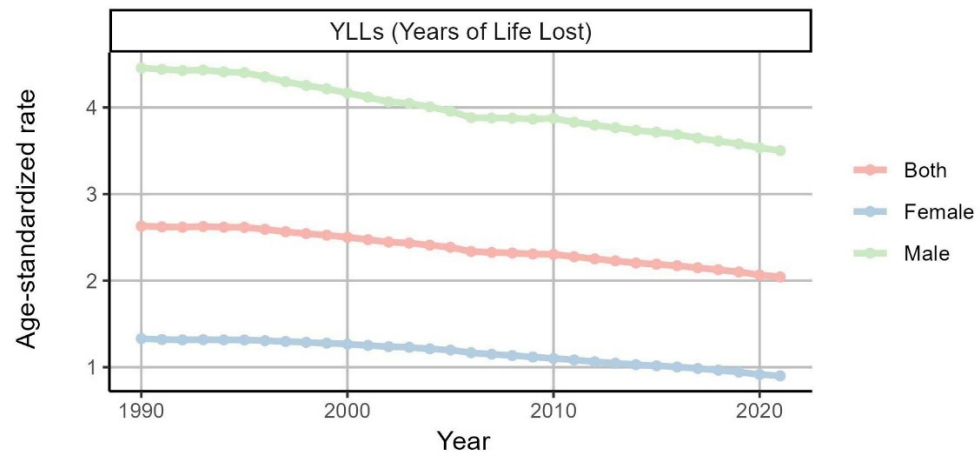


Figure S6. Trends in age-standardized YLL rates of atrial fibrillation and atrial flutter attributable to smoking in G20 countries by sex, 1990–2021.

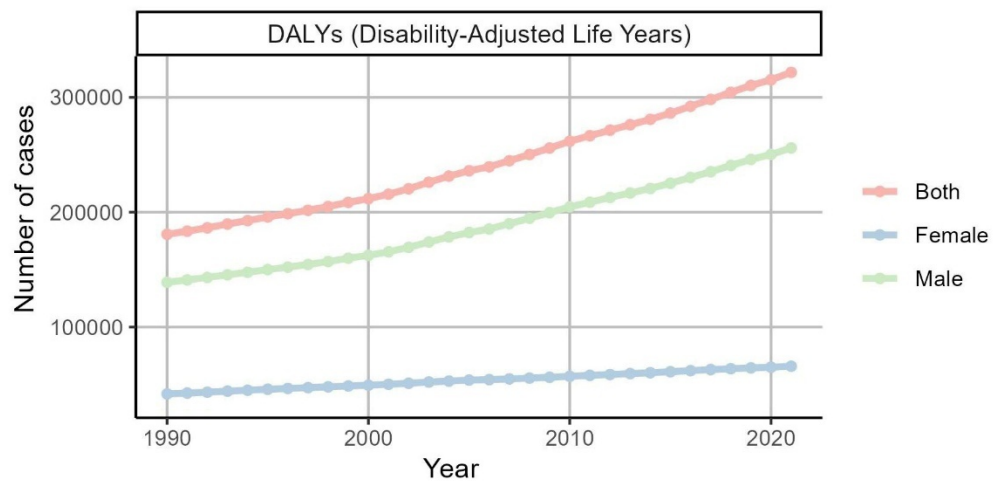


Figure S7. Trends in the number of DALYs attributable to smoking-related atrial fibrillation and atrial flutter in G20 countries by sex, 1990–2021.

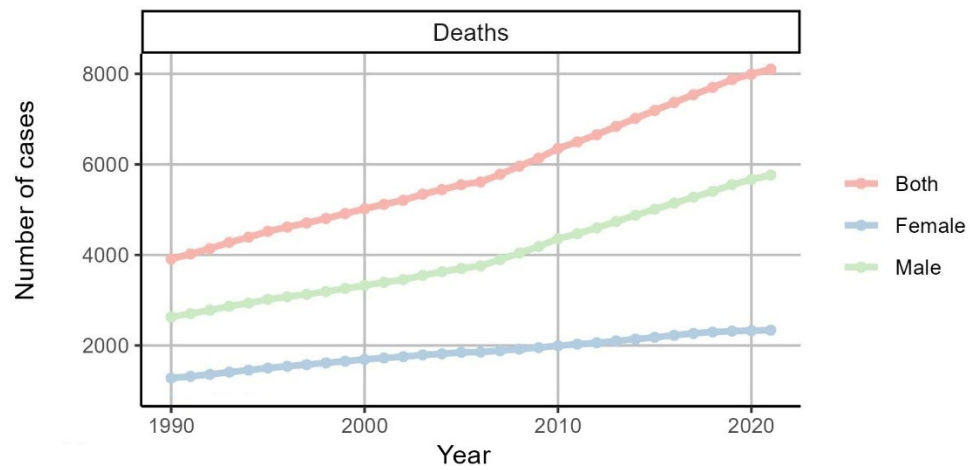


Figure S8. Trends in the number of deaths attributable to smoking-related atrial fibrillation and atrial flutter in G20 countries by sex, 1990–2021.

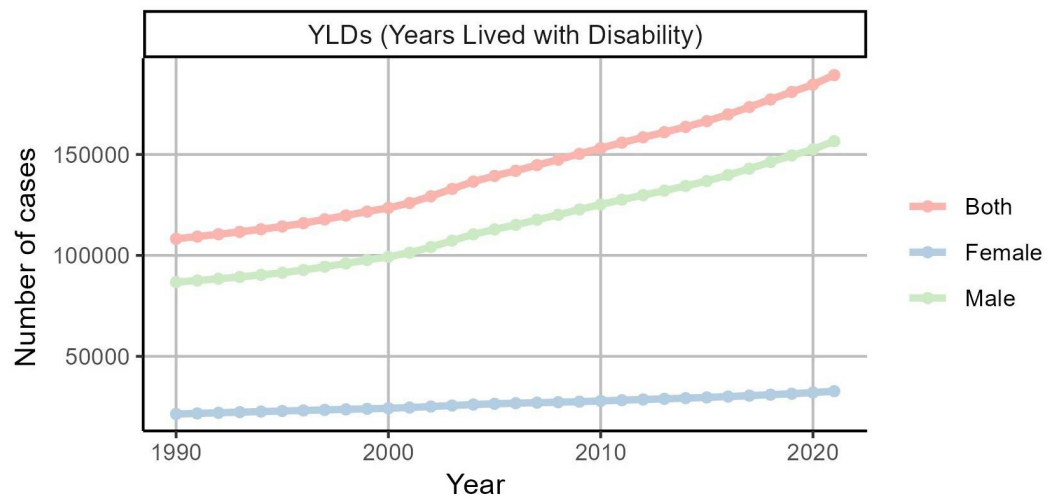


Figure S9. Trends in the number of YLDs attributable to smoking-related atrial fibrillation and atrial flutter in G20 countries by sex, 1990–2021.

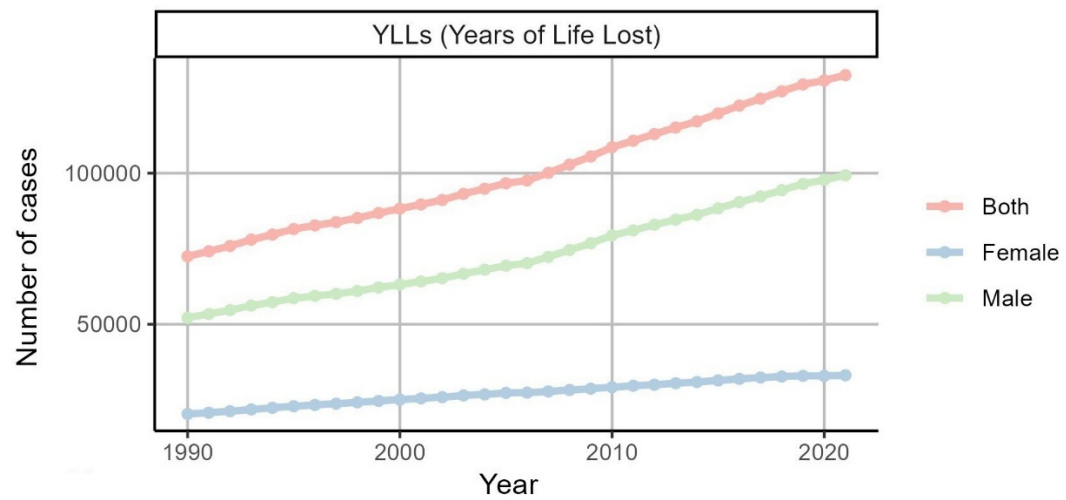


Figure S10. Trends in the number of YLLs attributable to smoking-related atrial fibrillation and atrial flutter in G20 countries by sex, 1990–2021.

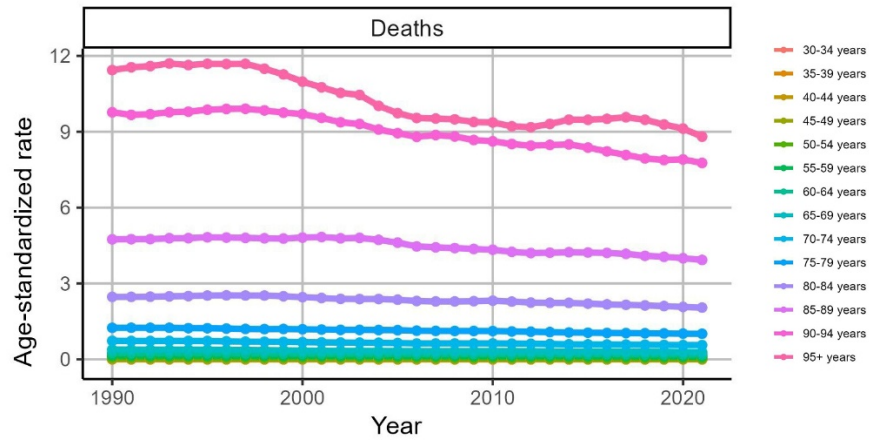


Figure S11. Trends in age-standardized mortality rates of atrial fibrillation and atrial flutter attributable to smoking across age groups in G20 countries, 1990–2021.

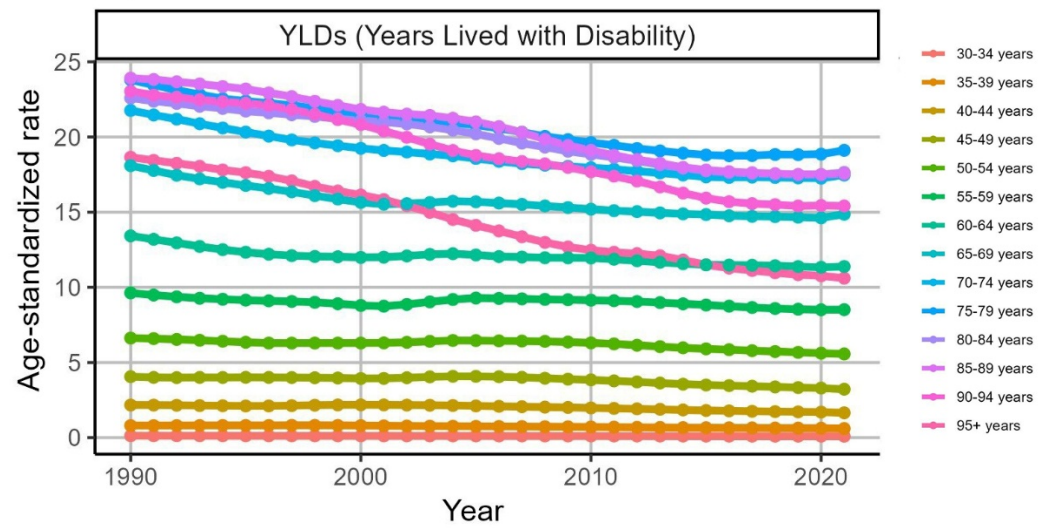


Figure S12. Trends in age-standardized YLD rates of atrial fibrillation and atrial flutter attributable to smoking across age groups in G20 countries, 1990–2021.

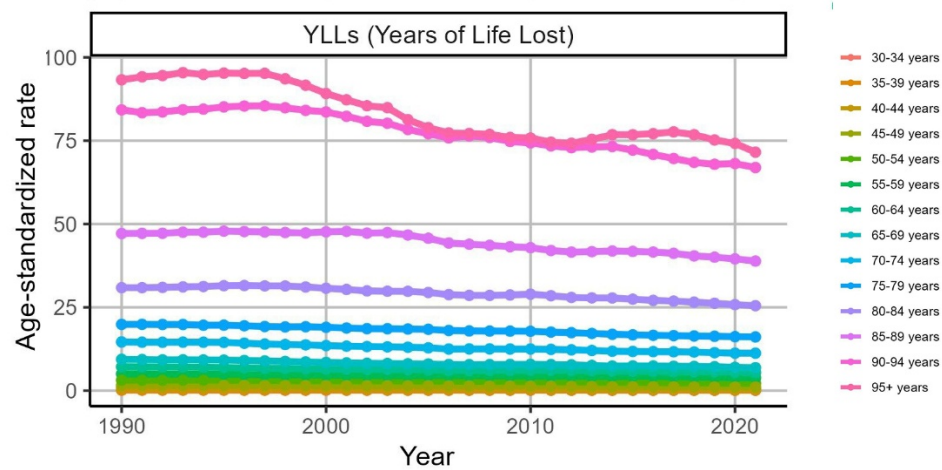


Figure S13. Trends in age-standardized YLL rates of atrial fibrillation and atrial flutter attributable to smoking across age groups in G20 countries, 1990–2021.

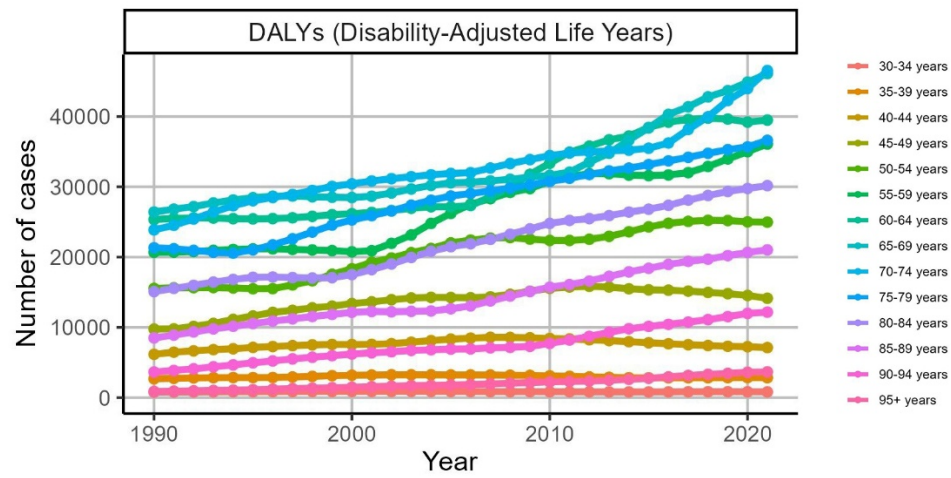


Figure S14. Trends in the number of DALYs attributable to smoking-related atrial fibrillation and atrial flutter across age groups in G20 countries, 1990–2021.

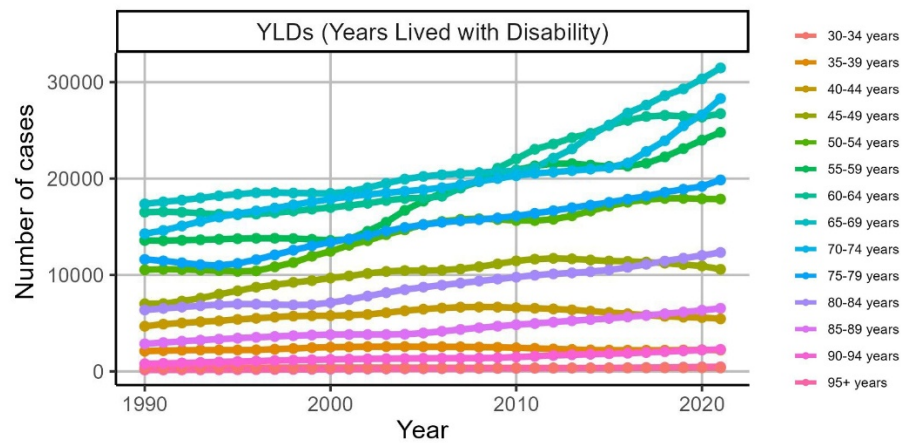


Figure S15. Trends in the number of YLDs attributable to smoking-related atrial fibrillation and atrial flutter across age groups in G20 countries, 1990–2021.

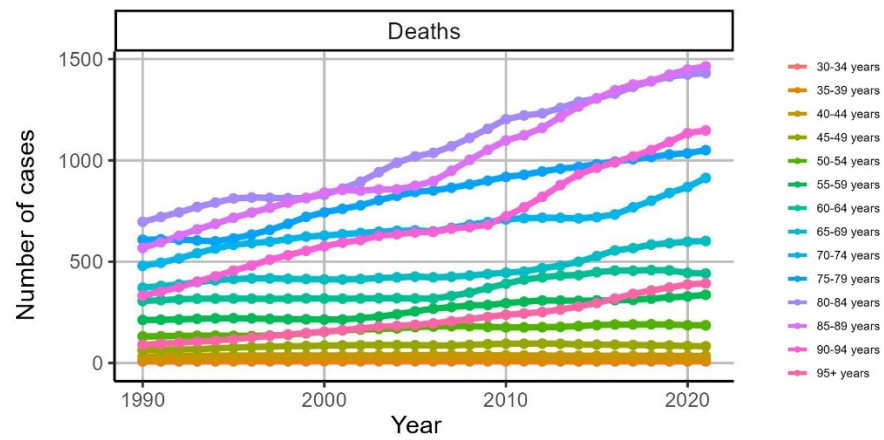


Figure S16. Trends in the number of deaths attributable to smoking-related atrial fibrillation and atrial flutter across age groups in G20 countries, 1990–2021.

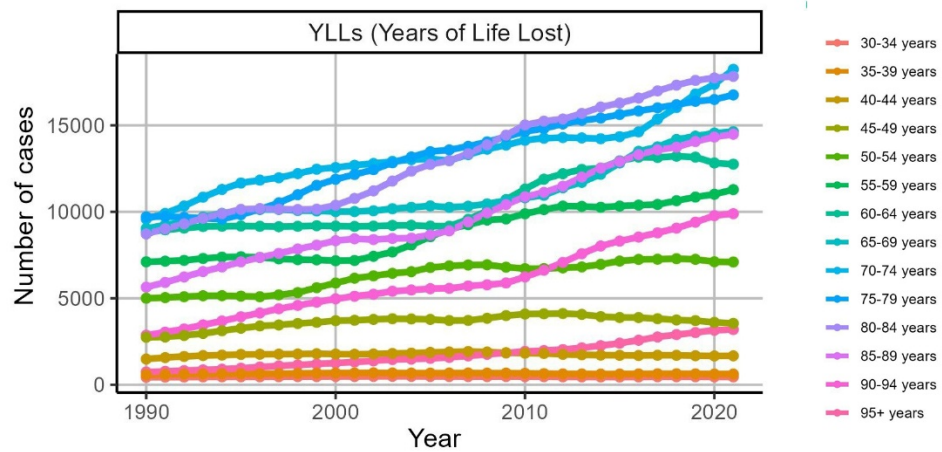


Figure S17. Trends in the number of YLLs attributable to smoking-related atrial fibrillation and atrial flutter across age groups in G20 countries, 1990–2021.

Age-standardized Deaths Rate

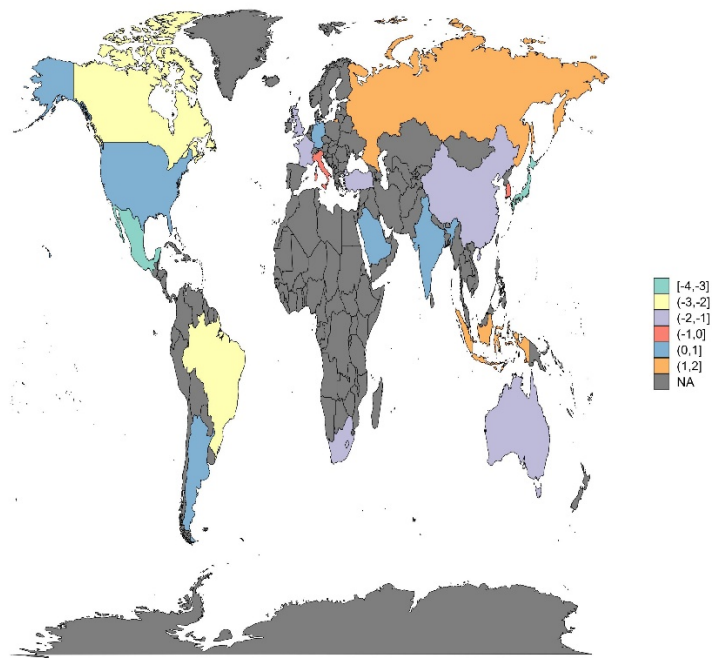


Figure S18. Global distribution of age-standardized mortality rates of atrial fibrillation and atrial flutter attributable to smoking, 2021.

Change in the number of DALYs cases

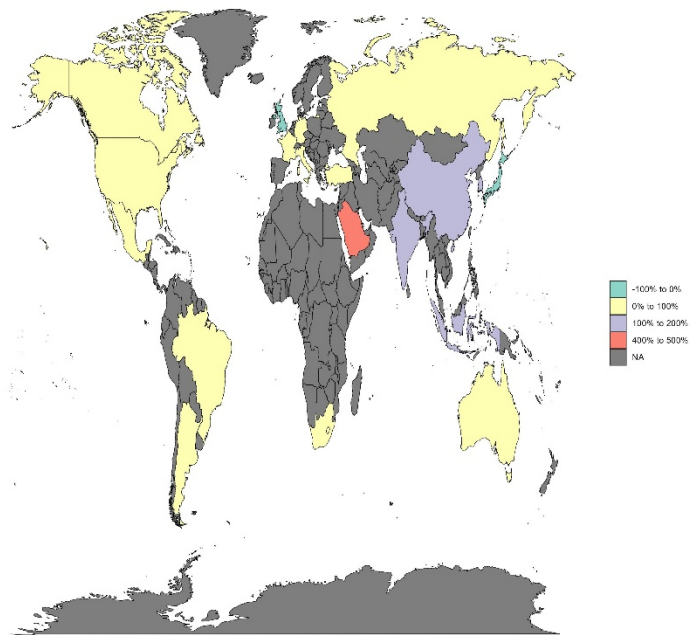


Figure S19. Percentage change in the number of DALYs attributable to smoking-related atrial fibrillation and atrial flutter by country, 1990–2021.

Change in the number of Deaths cases

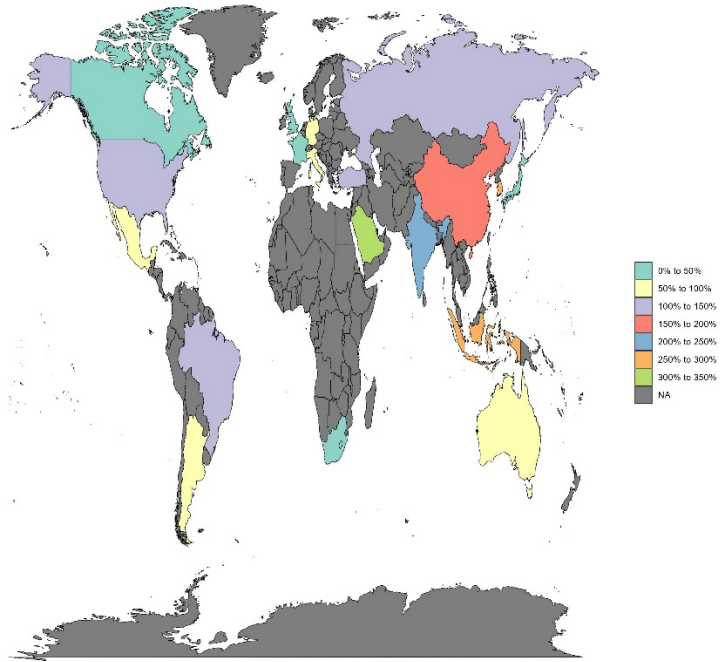


Figure S20. Percentage change in the number of deaths attributable to smoking-related atrial fibrillation and atrial flutter by country, 1990–2021.

Age-standardized YLDs Rate

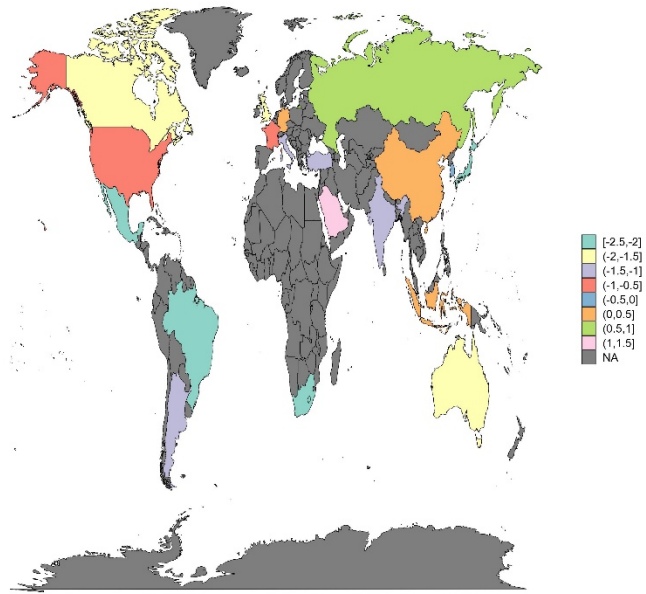


Figure S21. Global distribution of age-standardized YLD rates of atrial fibrillation and atrial flutter attributable to smoking, 2021.

Age-standardized YLLs Rate

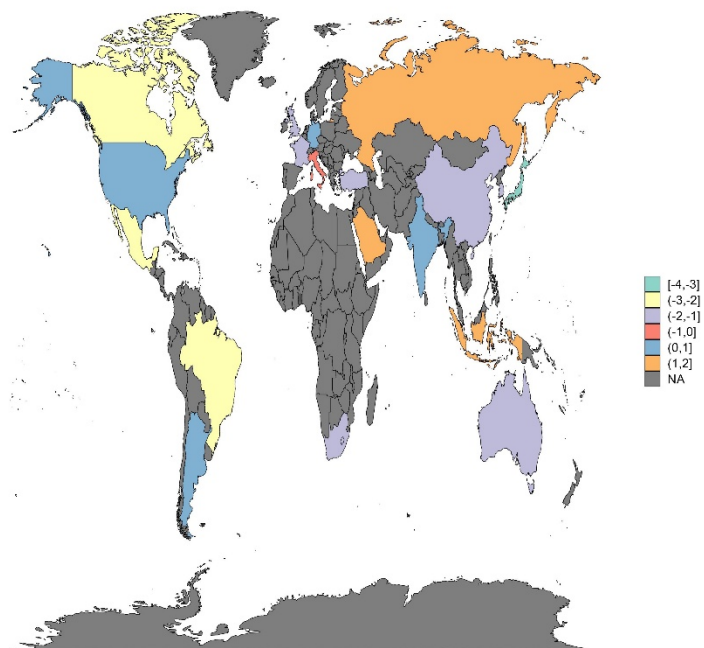


Figure S22. Global distribution of age-standardized YLL rates of atrial fibrillation and atrial flutter attributable to smoking, 2021.

Change in the number of YLDs cases

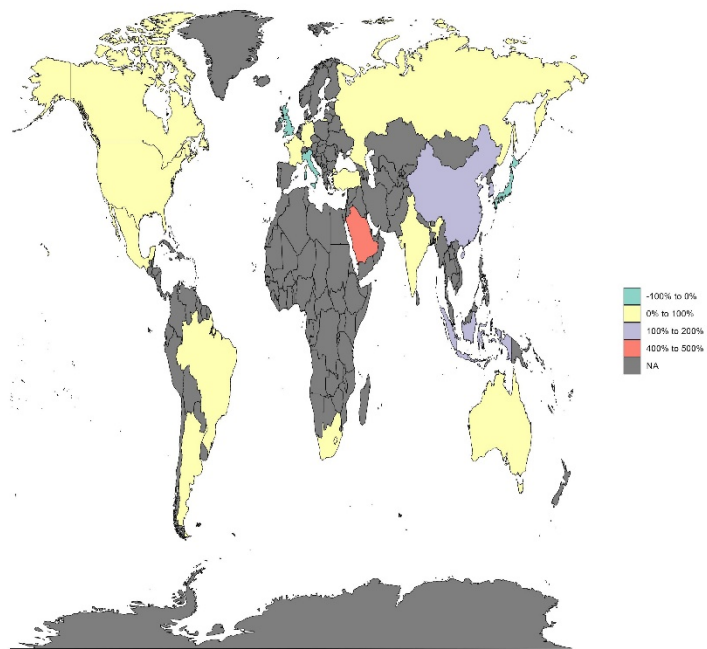


Figure S23. Percentage change in the number of YLDs attributable to smoking-related atrial fibrillation and atrial flutter by country, 1990–2021.

Change in the number of YLLs cases

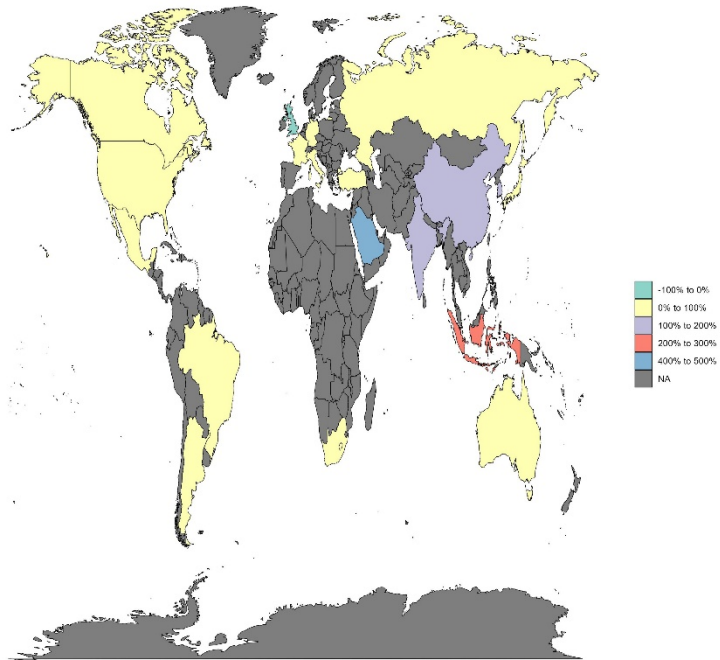


Figure S24. Percentage change in the number of YLLs attributable to smoking-related atrial fibrillation and atrial flutter by country, 1990–2021.

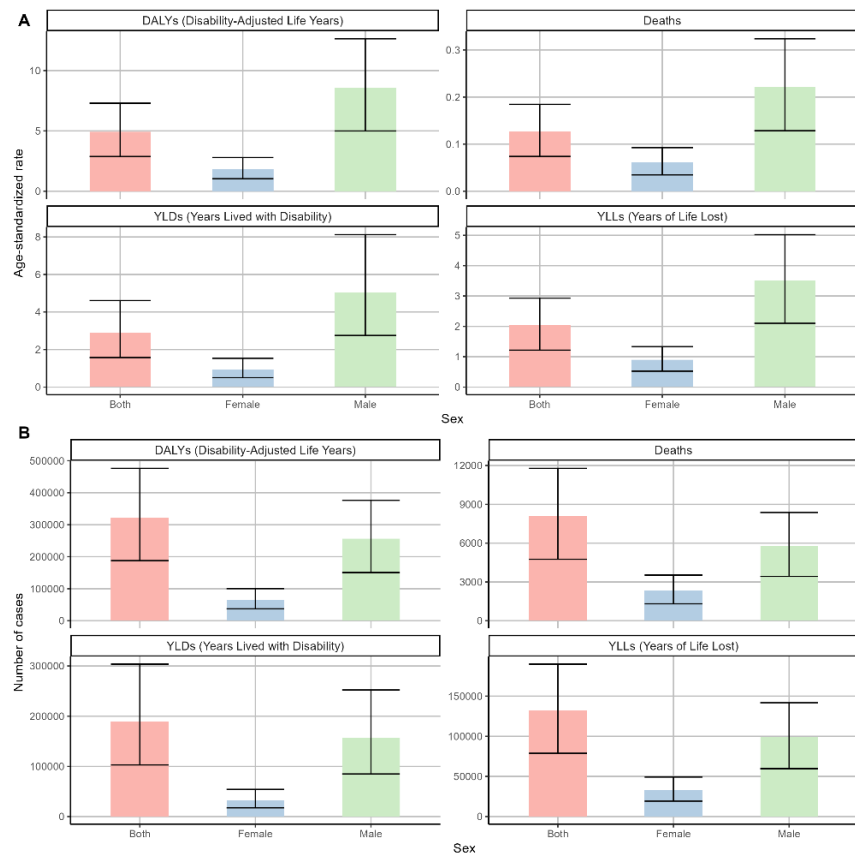


Figure S25. The number of cases and ASRs of Deaths, YLDs, YLLs and DALYs related to AF/AFL caused by smoking within the G20 in 2021. (A): ASR; (B): Number of cases. Error bars indicate 95% uncertainty intervals (UIs) derived from the Global Burden of Disease (GBD) 2021 estimates.

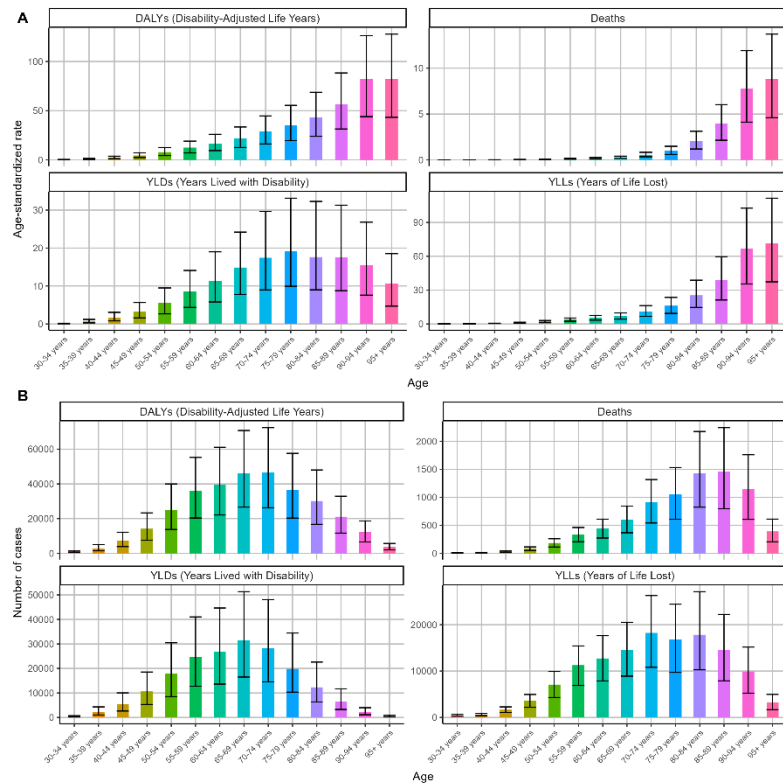


Figure S26. The number of cases and ASRs of Deaths, YLDs, YLLs and DALYs related to AF/AFL caused by smoking within the G20 in 2021 in different age group. (A): ASR; (B): Number of cases. Error bars indicate 95% uncertainty intervals (UIs) derived from the Global Burden of Disease (GBD) 2021 estimates.

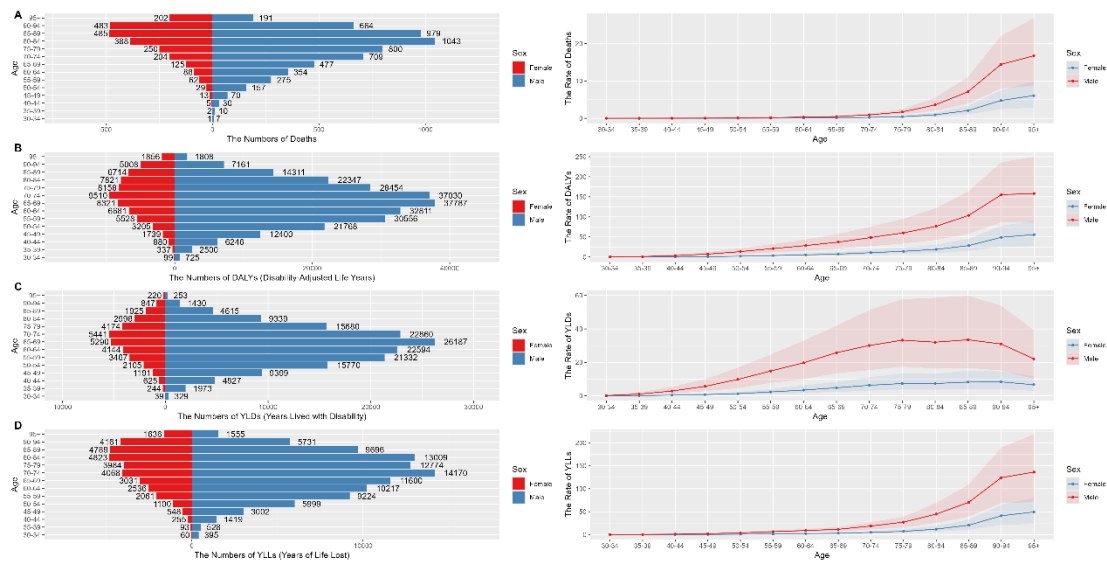


Figure S27. Sex-age trend of Deaths, YLDs, YLLs and DALYs related to AF/AFL caused by smoking within the G20 in 2021. (A): Deaths; (B): DALYs; (C): YLDs; (D): YLLs

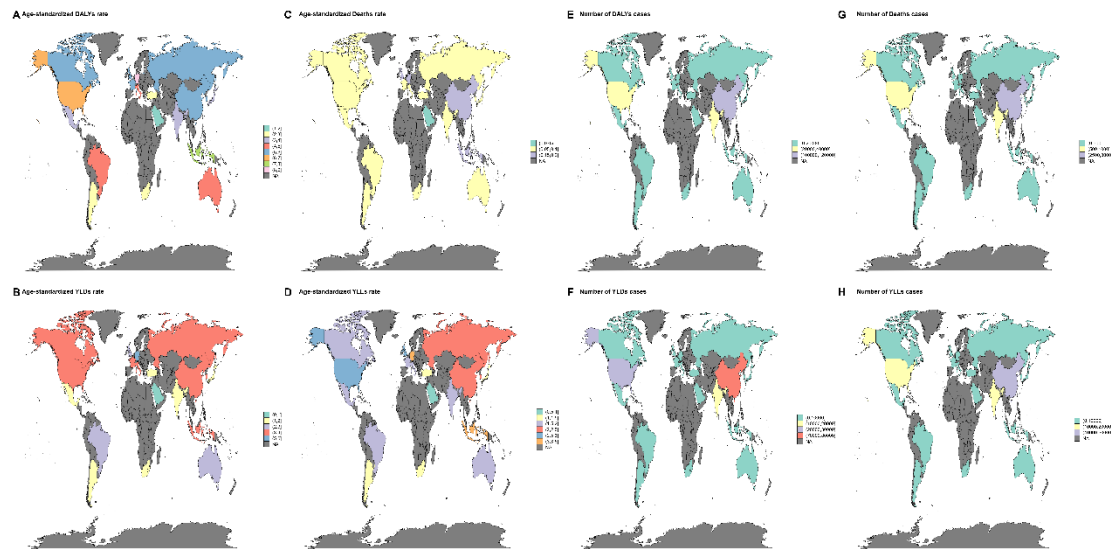


Figure S28. The number of cases and ASRs of Deaths, YLDs, YLLs and DALYs related to AF/AFL caused by smoking within the G20 countries in 2021. (A): ASR of DALYs; (B): ASR of YLDs; (C): ASR of Deaths; (D): ASR of YLLs; (E): Number of DALYs cases; (F): Number of YLDs cases; (G): Number of Deaths cases; (H): Number of YLLs cases

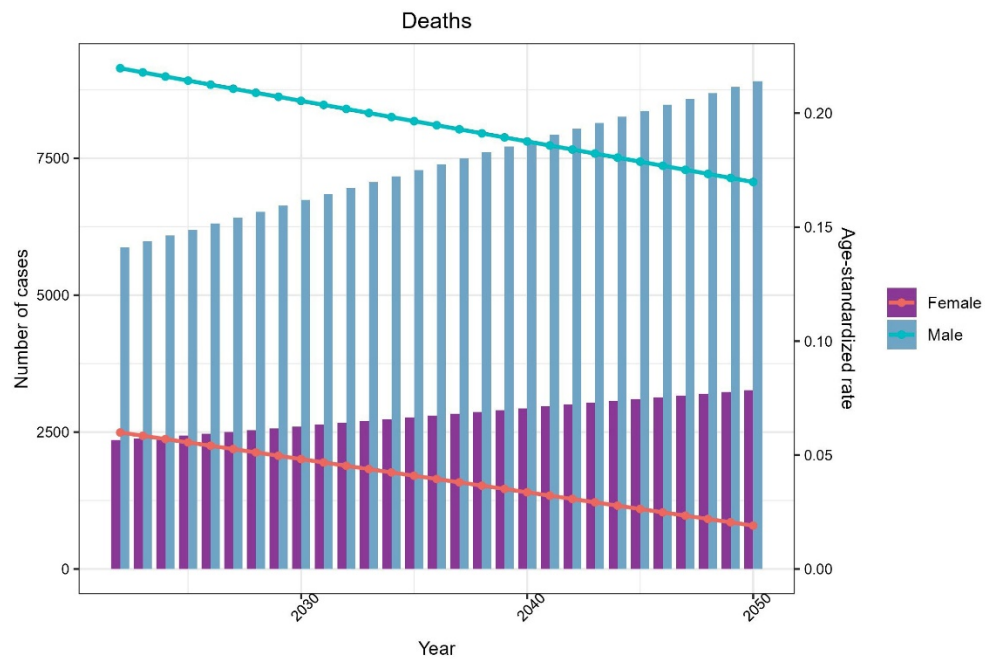


Figure S29. Projected trends in deaths and age-standardized mortality rates of atrial fibrillation and atrial flutter attributable to smoking in G20 countries by sex, 2022–2050.

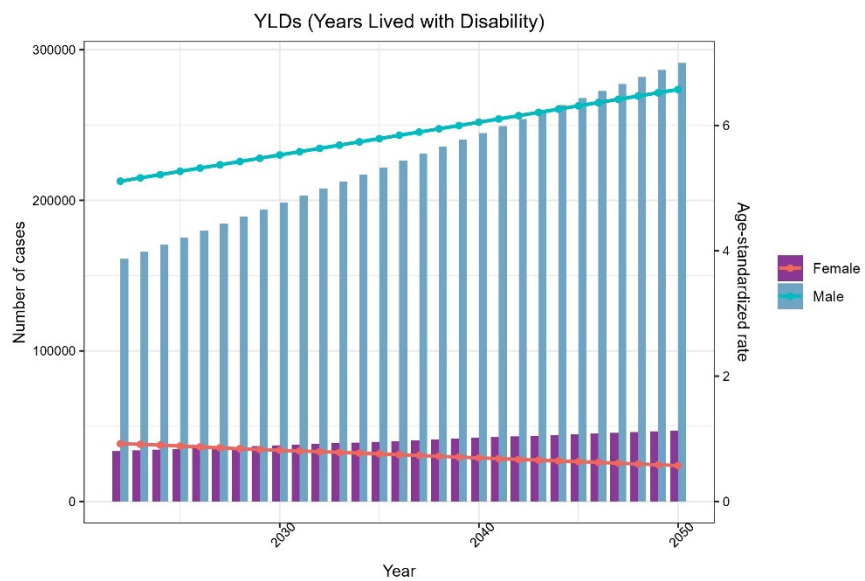


Figure S30. Projected trends in years lived with disability (YLDs) and age-standardized YLD rates of atrial fibrillation and atrial flutter attributable to smoking in G20 countries by sex, 2022–2050.

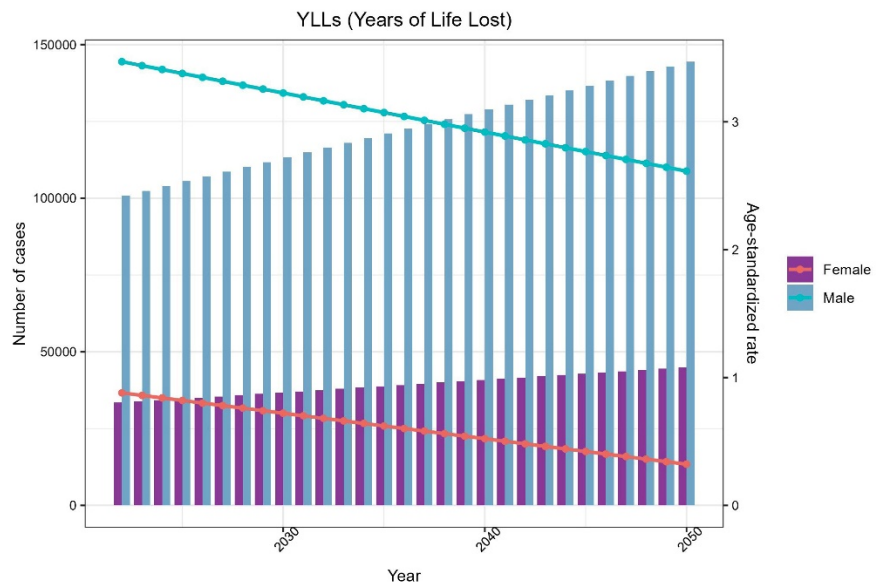


Figure S31. Projected trends in years of life lost (YLLs) and age-standardized YLL rates of atrial fibrillation and atrial flutter attributable to smoking in G20 countries by sex, 2022–2050.

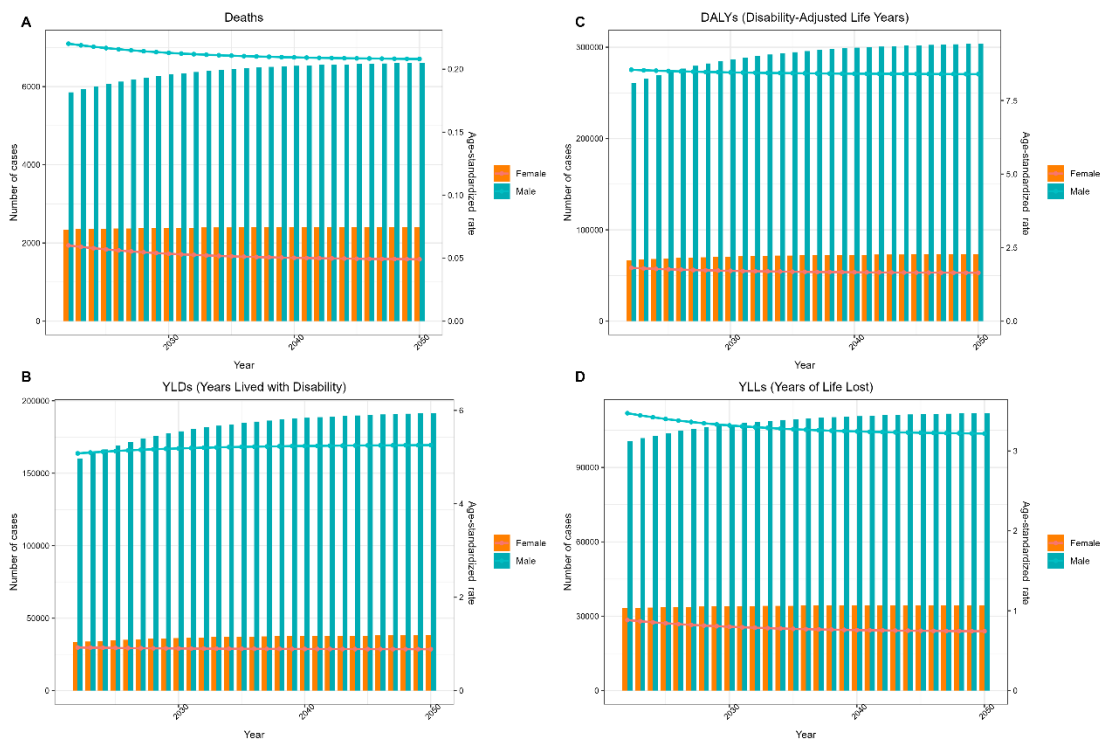


Figure S32. Prediction results of the ES model applied to predict smoking - related Deaths, YLDs, YLLs, and DALYs due to AF/AFL within G20 countries from 2022-2050. (A): Deaths; (B): YLDs; (C): DALYs; (D): YLLs