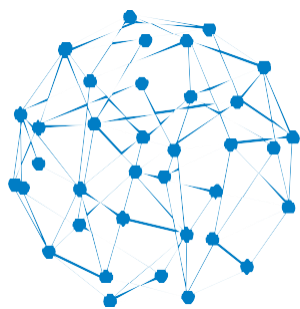




TID

Tobacco Induced Diseases

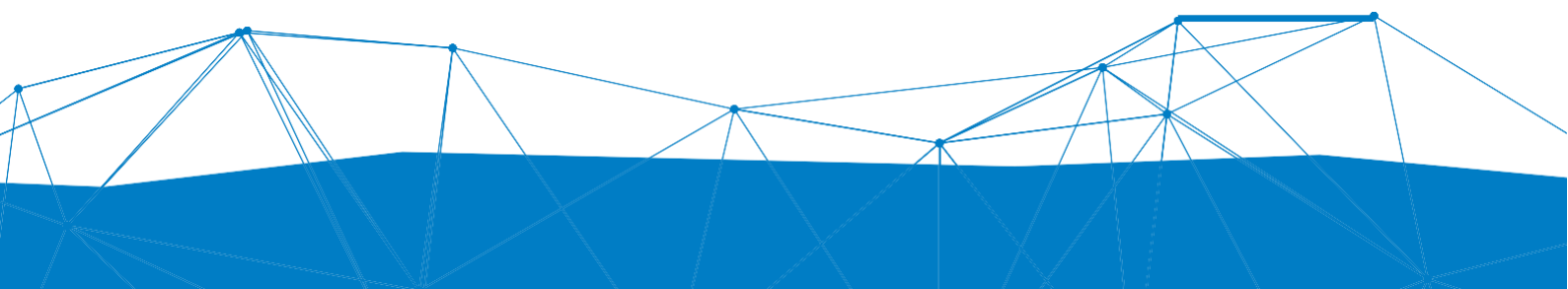
Supplementary file

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Global, regional, and national burden of low back pain attributable to smoking from 1990 to 2021: An age-period-cohort and Joinpoint analysis of the Global Burden of Disease Study 2021

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1. Supplementary Table 1. The absolute DALYs, age-standardized DALY rates (ASDR), and estimated annual percentage changes (EAPC) of low back pain caused by smoking across 204 countries and territories, 1990 – 2021

Location	1990		2021		1990 – 2021	
	DALYs (95% UI)	ASDR (95% UI)	DALYs (95% UI)	ASDR (95% UI)	EAPC (95% CI)	Trend
Afghanistan	2105.6 (981.7-3726.9)	29.3 (13.7-52.1)	10587 (5235.1-17980.8)	54.9 (27.1-94)	2.37 (2.19-2.56)	
Albania	6188.3 (3348.2-9390.4)	240.5 (126.7-360.5)	9707.9 (5302.3-15345.3)	263.1 (148-419.4)	0.43 (0.34-0.51)	
Algeria	16274.4 (8624.7-25063.3)	109.8 (57.8-166.2)	39053.1 (21166.8-61190.8)	89.1 (48-140.1)	-0.73 (-0.78--0.69)	
American Samoa	36.8 (19.3-58.8)	112.5 (58.7-179.2)	48.4 (24.3-78.6)	91.2 (45.6-148.3)	-0.84 (-0.96--0.72)	
Andorra	149.4 (80.4-223.9)	235.5 (127.8-354.9)	273.9 (150.6-434.5)	212.3 (117-335.1)	-0.33 (-0.35--0.32)	
Angola	4546.4 (2306.8-7558.6)	81.9 (41.8-135.8)	10010.6 (5154.2-17111.6)	52.9 (27.1-91.1)	-1.41 (-1.49--1.33)	
Antigua and Barbuda	30.2 (13.8-57.2)	59.9 (27.7-113.1)	73.2 (34.4-133.3)	64.6 (30.2-117.9)	0.18 (0.16-0.2)	
Argentina	61348.8 (33057.2-97151.3)	190.9 (103.1-301.7)	78425.5 (40898.6-129678.8)	148.6 (77.9-245.1)	-0.79 (-0.9--0.68)	
Armenia	5172.6 (2992.1-7750.9)	165.8 (95.7-247.5)	6501.9 (3600.9-9832.4)	156.8 (88.3-236.8)	-0.11 (-0.16--0.06)	
Australia	49493.6 (26555-74637.8)	263 (141.6-394.6)	62892.6 (30629.5-97700.6)	185.7 (89.8-289.7)	-1.11 (-1.17--1.04)	
Austria	18428.8 (9957.3-29075.9)	196.7 (107.9-302.1)	24399.5 (13304.7-37356.4)	188.4 (101.9-287.1)	-0.01 (-0.1-0.08)	
Azerbaijan	6615 (3537.1-9647.7)	114.1 (61.5-166.7)	15596.9 (9049.3-24165.2)	128.6 (74.9-199.5)	0.43 (0.27-0.6)	
Bahamas	84.7 (40.2-146.6)	42.7 (20.3-73.4)	180.8 (86.5-342.5)	38.3 (18.1-72.7)	-0.41 (-0.48--0.34)	

Bahrain		424.1 (212.2-676.5)	115.6 (57.9-175.6)		1806 (972.8-2949.2)	103.3 (55.1-167.3)		-0.22 (-0.35--0.09)	
Bangladesh		78397.6 (43740.7-118434.3)	135.5 (73.9-205.8)		155302.7 (84994.5-239847.6)	108.4 (59.7-167.6)		-0.63 (-0.71--0.55)	
Barbados		129.3 (63.1-225.3)	51.4 (25.4-90.1)		170.3 (80-328.7)	41.9 (19.3-81.7)		-0.97 (-1.11--0.83)	
Belarus		22677.4 (12880.2-34832)	187.4 (106-283)		25268.5 (13959.2-39813.3)	183.8 (99.9-287.9)		0 (-0.12-0.12)	
Belgium		31668.2 (17543.9-48074.7)	250.9 (141.1-378)		30110.6 (14209.5-46497.3)	188.8 (88.7-291.2)		-0.93 (-0.98--0.88)	
Belize		71.3 (35.7-118.9)	68.4 (34.6-113.4)		215.9 (106.2-374)	61.2 (30.2-104.8)		-0.12 (-0.22--0.02)	
Benin		1151.3 (547.9-1877.3)	47.4 (23.3-77.2)		2200.1 (1061.2-3733.2)	30.8 (14.8-52.4)		-1.71 (-1.94--1.47)	
Bermuda		63.8 (32.3-102.5)	92.7 (47.7-148.9)		72.7 (37.5-131.7)	72.1 (36.8-131.1)		-1.02 (-1.12--0.92)	
Bhutan		246.4 (114.1-422.8)	74 (34.5-124.2)		429.6 (209.1-790.5)	59.6 (28.9-108.9)		-0.75 (-0.78--0.72)	
Bolivia (Plurinational State of)		1758.4 (801.7-2909.8)	44.2 (20.8-72.4)		4746.8 (2467.9-7994.6)	43.7 (22.8-74.4)		0.46 (0.22-0.7)	
Bosnia and Herzegovina		12642 (7100.6-19490.1)	266.1 (147.6-410.4)		14917.5 (7899-23038)	312.4 (165.7-468.5)		0.63 (0.42-0.84)	
Botswana		632.2 (332.3-982.1)	88.3 (46.9-138.4)		1827.6 (963.6-2951.2)	92.9 (49.5-149)		0.23 (0.21-0.26)	
Brazil		222128.1 (127121.9-338512.4)	197.3 (111.4-304.2)		278668.7 (139740.9-438614)	109.3 (54.8-172)		-2.13 (-2.24--2.01)	
Brunei Darussalam		303.5 (162.7-483.4)	167.2 (89.5-257.1)		575.9 (292.8-961.8)	111.9 (56.9-187)		-1.25 (-1.38--1.12)	
Bulgaria		37127.2 (20543.3-57305.2)	340 (189.9-516.8)		36432.9 (19591-54485)	350 (191.7-514.3)		0.04 (-0.02-0.09)	
Burkina Faso		2327.9 (1159.5-3652.7)	43.8 (21.8-68.5)		4533.4 (2249.6-7674.2)	34 (17.1-56.6)		-0.91 (-0.95--0.87)	
Burundi		1847.6 (901.7-3016.8)	62.3 (30.7-102.3)		3421.9 (1717.4-6148.2)	47.9 (24.4-84.8)		-0.64 (-0.78--0.5)	

Cabo Verde		98.1 (48.5-165.3)	48 (23.7-80.5)		179 (88.5-316.6)	37.8 (18.7-67)	-0.77 (-0.83--0.72)
Cambodia		5764.4 (3276.7-8728.9)	104.2 (57.4-156.8)		11424.8 (5897.5-17574.4)	76 (39.7-117.2)	-1.37 (-1.53--1.22)
Cameroon		3627.4 (1871.1-5628.5)	61.4 (31.5-95.5)		6926.5 (3551-12302.9)	37.6 (19.3-66.2)	-1.7 (-1.91--1.49)
Canada		82540.4 (43643.8-124664.3)	259.3 (138-387.6)		88719.2 (44499.9-137211.6)	169.5 (84.7-259.8)	-1.53 (-1.62--1.44)
Central African Republic		822.6 (407-1356.2)	53.7 (26.9-88.1)		1495.9 (748.2-2583.3)	43.3 (21.5-75.1)	-0.73 (-0.84--0.62)
Chad		2166 (1064.5-3584.6)	65.7 (32.4-108.9)		3764.3 (1866.9-6574.9)	46.7 (22.9-81.1)	-1.28 (-1.49--1.07)
Chile		23798.2 (13352.6-36492.3)	201.8 (113.9-309.7)		39634.1 (19297.2-64906.1)	172.8 (83.7-280.4)	-0.47 (-0.53--0.41)
China		1255932.7 (742462.8-1918254)	126.4 (73.9-193.1)		1792215.6 (998595.6-2722182.7)	87.3 (48.5-131.5)	-0.98 (-1.07--0.9)
Colombia		26001.3 (13730.4-40454.2)	112.3 (58.6-175)		34852.9 (16578.7-59120.1)	62.1 (29.5-105.6)	-1.86 (-1.96--1.76)
Comoros		151.9 (76.8-236.9)	60 (30.4-94.9)		278.1 (139.6-464.8)	46.2 (23.1-76.6)	-1 (-1.09--0.9)
Congo		578.2 (291.9-969.4)	42.9 (21.4-71.4)		2046.4 (1025.3-3432.7)	53 (26.7-91.1)	0.92 (0.8-1.03)
Cook Islands		19.7 (10.6-29.8)	133.4 (71.9-204.2)		21.5 (11.1-35.8)	115.6 (60-195.2)	-0.52 (-0.61--0.44)
Costa Rica		2320.4 (1199.2-3688.7)	107.1 (56.8-171)		3766.6 (1857.2-6325.9)	64.1 (31.6-107.5)	-1.55 (-1.74--1.36)
Coted'Ivoire		3800.8 (1802-6061.3)	58.6 (28.7-95.6)		9572.6 (4890.4-16409.6)	49.4 (25.3-85.1)	-0.6 (-0.79--0.41)
Croatia		21537.9 (12087.5-32490.6)	351.7 (198.7-523.1)		18892.6 (10220.4-28687.3)	323.9 (179.7-491.2)	-0.05 (-0.12--0.03)
Cuba		13907.2 (7441.1-22015.1)	133.8 (71.8-210.7)		19266.2 (9836.3-32514.4)	115.7 (58.7-194.3)	-0.58 (-0.69--0.47)

Cyprus	1893.9 (1045.1-2926.2)	235.8 (130-362.2)	3545.7 (1942-5590.5)	193 (106.2-304.3)	-0.7 (-0.79--0.6)
Czechia	45316.2 (25536.5-69547.4)	363.2 (204.7-558.4)	46759.3 (26047.8-73129.8)	301 (168.4-467.2)	-0.68 (-0.71--0.65)
Democratic People's Republic of Korea	19061.4 (10796.5-28144.4)	96.9 (54.2-144.5)	29377.9 (16066.6-47258.1)	86.6 (47.3-139.4)	-0.51 (-0.6--0.42)
Democratic Republic of the Congo	8678.4 (4304.9-14229.2)	41.1 (20.6-67.3)	19690.8 (10135-33144.2)	36.5 (19-61.7)	-0.23 (-0.37--0.08)
Denmark	27811.8 (15377.6-40536)	420.4 (235.4-612.5)	19545.8 (10081.2-30003)	229.5 (116.3-355.3)	-2.29 (-2.44--2.14)
Djibouti	161.6 (79.9-255.6)	76.1 (38.3-120.8)	858 (443.2-1329.7)	87.7 (44.4-138.7)	0.67 (0.57-0.78)
Dominica	36 (16.9-65)	59.7 (28.5-107.4)	56.1 (27.9-99.5)	66.9 (33.4-118.5)	0.45 (0.3-0.59)
Dominican Republic	4198.5 (2199.9-6700.5)	94.1 (48.4-150)	5506.1 (2741-9543)	52.3 (26.2-91.2)	-2.21 (-2.39--2.02)
Ecuador	4450.8 (2299.2-7046.9)	69.3 (36-108.4)	7142.2 (3769.7-12062.5)	41.2 (21.7-69.7)	-1.49 (-1.6--1.37)
Egypt	38476.2 (21378.5-58600.5)	106 (58.1-160.9)	100588.5 (58629.8-152363.8)	116.7 (67.1-177.2)	0.35 (0.24-0.46)
El Salvador	2046.5 (983.2-3656.5)	59.6 (28.8-106.1)	2182.7 (1004.2-4364.2)	36.3 (16.7-72.7)	-1.63 (-1.71--1.54)
Equatorial Guinea	125.7 (65-199.5)	50.7 (25.9-81.4)	378.6 (202.3-601.7)	45.2 (24.1-73.7)	-0.3 (-0.35--0.24)
Eritrea	595.1 (302.8-934.3)	31.4 (15.9-49.9)	1411.3 (702.1-2356.6)	30.1 (14.9-50)	-0.13 (-0.19--0.08)
Estonia	4267.7 (2352-6595.5)	228.3 (124.5-348.9)	4224.9 (2059.5-6625.6)	220.9 (110.8-346.6)	0.13 (-0.05-0.31)
Eswatini	171.3 (86.1-284.7)	45.3 (22.5-77.1)	255.5 (120.5-435.2)	30.6 (14.6-53)	-1.3 (-1.51--1.09)
Ethiopia	8427.2 (4136.4-13606.6)	31.4 (15.4-50.3)	16145.8 (7917.4-29380.4)	26.4 (13.1-47.6)	-0.26 (-0.46--0.06)

Fiji	598.3 (308.7-922.3)	111.2 (57.3-170.6)	783.9 (427.6-1297.5)	84.1 (45.8-141.3)	-1.04 (-1.14--0.95)
Finland	11923.8 (6682.9-17772.6)	190.9 (106.7-282.8)	11826 (6269.3-17755.3)	153.3 (79.3-227.7)	-0.59 (-0.65--0.54)
France	142383.8 (75438.9-216028.3)	207.3 (111.6-312.4)	187736.7 (96559.3-292349.4)	204.1 (105-306.9)	0.05 (-0.01--0.1)
Gabon	206 (98.5-362.5)	32.4 (15.7-56.3)	766.9 (391.9-1310.7)	53.5 (27.2-92.6)	2 (1.8-2.2)
Gambia	394.2 (209.6-614.8)	80.2 (42.2-126)	699.3 (375.5-1133.7)	50.2 (26.6-82.4)	-1.7 (-1.77--1.63)
Georgia	7890.4 (4383.8-11853.4)	129.7 (72.8-193.5)	7334.5 (4161.7-11238.5)	151 (84.7-229.7)	0.64 (0.54-0.74)
Germany	297411.7 (164102.7-452304.1)	287.8 (161.6-433.7)	276957.8 (146662.4-426740.9)	225.7 (120.1-342.2)	-0.67 (-0.75--0.59)
Ghana	3140.1 (1505.5-5245.5)	38.6 (18.4-64.1)	5255.6 (2556.8-9128)	24.7 (12.1-42.4)	-1.56 (-1.62--1.49)
Greece	30707.1 (17110.7-46192.7)	238.4 (135.9-354.3)	38240.1 (20275.6-57358.4)	237.7 (130.3-346.5)	0.07 (-0.03-0.16)
Greenland	135 (74.4-212.3)	257.5 (144.1-394.7)	166.4 (93.3-258.3)	235 (131.2-364.4)	-0.35 (-0.47--0.23)
Grenada	40.8 (19.4-73.2)	58.7 (27.7-105.1)	71.5 (34.7-132.7)	53 (25.4-98.1)	-0.34 (-0.44--0.25)
Guam	126.8 (65.5-202.8)	112 (58.9-181.5)	209.7 (112.3-326.2)	109.7 (57.7-169.2)	-0.06 (-0.1--0.02)
Guatemala	3943.9 (1977-6631.3)	85.5 (42.9-144.8)	6167 (2849.2-11244.3)	48.5 (22.6-88.4)	-1.76 (-1.84--1.69)
Guinea	2407.7 (1190-4069.2)	63.5 (31.2-106.9)	3909.7 (1956.2-6763.6)	52.5 (26.1-91.4)	-0.72 (-0.83--0.61)
Guinea-Bissau	117.2 (55-212.1)	22 (10.4-38.8)	388.3 (194-667.2)	32.7 (16.5-57.4)	1.56 (1.44-1.69)
Guyana	307.7 (156.7-489.8)	61.3 (31.1-99.4)	471.5 (245.5-796.1)	60.1 (31.3-102.3)	-0.09 (-0.16--0.02)
Haiti	2218.9 (1122-3656.7)	52.9 (26.7-87.5)	3746.3 (1813.5-7305.2)	37.2 (18.2-73.7)	-1.25 (-1.4--1.11)

Honduras	2182.9 (1109.3-3661.7)	83.7 (42.5-138.7)	(42.5-138.7)	3617.4 (1763.8-6002)	45.5 (22.3-75.8)	(22.3-75.8)	-2.2 (-2.36--2.05)	
Hungary	49006.5 (28138-74639.2)	377.2 (216.5-573.7)	(216.5-573.7)	42508.4 (22534.6-66287.8)	307.6 (164.5-474.9)	(164.5-474.9)	-0.6 (-0.7--0.5)	
Iceland	623.2 (351.9-971.9)	237.9 (134.7-368.8)	(134.7-368.8)	751.1 (391.6-1248.4)	157.2 (82.8-261.4)	(82.8-261.4)	-1.44 (-1.49--1.4)	
India	455603.1 (243499.2-716074.6)	78.2 (41.9-123.1)	(41.9-123.1)	511424.5 (251628.4-834774.1)	39.1 (19.6-63.7)	(19.6-63.7)	-2.14 (-2.33--1.96)	
Indonesia	101390.6 (57950.4-153308.3)	78.9 (45-118.5)	(45-118.5)	233968.6 (126963.3-348474.4)	78.8 (42.4-117.8)	(42.4-117.8)	0.05 (-0.06-0.16)	
Iran (Islamic Republic of)	38172.3 (19526.2-61217.9)	112.3 (57.2-176)	(57.2-176)	100210.8 (51138.3-165630.9)	100.3 (51.5-167.6)	(51.5-167.6)	-0.3 (-0.38--0.22)	
Iraq	13034.8 (7029.9-20042)	131 (69-200.9)	(69-200.9)	38553 (21810.7-59969.2)	119.9 (68.1-187)	(68.1-187)	-0.22 (-0.3--0.14)	
Ireland	9625.1 (5039.2-14482.8)	257 (135.5-387.3)	(135.5-387.3)	10678.6 (5623-16791.7)	156.6 (81.7-245.5)	(81.7-245.5)	-1.75 (-1.88--1.63)	
Israel	10224.3 (5718.9-16059.3)	220.7 (124.8-346.6)	(124.8-346.6)	16220.4 (8285.8-26065.7)	160.2 (82.8-257.1)	(82.8-257.1)	-1.04 (-1.09--0.99)	
Italy	168545.6 (90394.4-254594.3)	233.4 (124.2-348.6)	(124.2-348.6)	154083.8 (82665.5-244295.2)	169.4 (90.4-266.8)	(90.4-266.8)	-1.04 (-1.11--0.97)	
Jamaica	1525.2 (800.3-2394.2)	89.2 (46.8-138.4)	(46.8-138.4)	1706.6 (831-2983.5)	55.8 (27.1-97.6)	(27.1-97.6)	-1.81 (-1.99--1.63)	
Japan	376126.7 (208961.4-560471.3)	237 (132.3-350.3)	(132.3-350.3)	316564.5 (168560.6-516220.8)	170.7 (91.3-276.1)	(91.3-276.1)	-1.06 (-1.15--0.96)	
Jordan	3086 (1741.4-4650.1)	160.9 (88.6-245.9)	(88.6-245.9)	18046.5 (10317.7-27293.7)	167.8 (97.2-256.8)	(97.2-256.8)	0.18 (0.12-0.23)	
Kazakhstan	19138.8 (10831.7-29515.9)	127.5 (71.4-195.5)	(71.4-195.5)	26334.5 (13147.9-40669.6)	123.1 (61.4-190.1)	(61.4-190.1)	-0.08 (-0.27-0.11)	
Kenya	6701.1 (3395.8-10615.4)	64.1 (32-101.8)	(32-101.8)	16069.4 (8589.3-25893.1)	50.7 (26.4-82.7)	(26.4-82.7)	-0.9 (-0.98--0.83)	

Kiribati		73 (40.6-111.6)	152.8 (85.9-233.1)	157.6 (87.8-242.9)	161.7 (90.4-246.3)	-0.01 (-0.23-0.21)
Kuwait		1682.9 (930.1-2626.4)	131 (71-197.4)	6080.7 (3290.2-9501.2)	111 (59.6-176.1)	-0.6 (-0.64--0.56)
Kyrgyzstan		4059.8 (2312.2-6176.3)	123.9 (69.7-188.9)	8107.9 (4368.1-12164.1)	126.9 (67.7-190.4)	0.33 (0.16-0.51)
Lao Democratic Republic	People's	2439.5 (1309.2-3745.9)	96.7 (51.7-147.5)	5211.6 (2957.9-8161.4)	85.1 (48.6-132.6)	-0.3 (-0.37--0.23)
Latvia		6982.1 (3891.1-10605.1)	212.1 (117.5-319.5)	5347.9 (3085.2-8190.7)	192.3 (107.5-292)	-0.13 (-0.26-0)
Lebanon		3536.7 (1850.7-5440.9)	140.1 (72.7-215.9)	11047 (6095.4-17236.8)	186.5 (103-291.9)	0.94 (0.65-1.23)
Lesotho		551.4 (278-882.8)	58.6 (29.5-95.5)	700.7 (382.6-1085.5)	49 (26.6-76.4)	-0.61 (-0.73--0.49)
Liberia		700.9 (354.8-1129.4)	50.1 (25.3-79.1)	1348.2 (661.3-2324.1)	38.3 (18.9-66.7)	-0.99 (-1.13--0.86)
Libya		2597.7 (1417.2-4004.2)	105.1 (56.2-162.3)	8371.7 (4717.4-12725.1)	111 (62.3-169.1)	0.42 (0.3-0.55)
Lithuania		8007.6 (4513.1-12400.4)	192.5 (108.9-296.5)	8448 (4414.1-12973.2)	210.2 (112-315.6)	0.54 (0.46-0.62)
Luxembourg		1128.6 (618.4-1758.1)	232.1 (128.2-360.2)	1652.6 (893.3-2648.5)	187.9 (102.2-296.7)	-0.75 (-0.81--0.69)
Madagascar		5045.9 (2707.7-7721.1)	77.3 (41.1-119.3)	8786.8 (4891-13915.7)	49.9 (27-78.9)	-1.34 (-1.59--1.09)
Malawi		3183.6 (1636.7-5038.2)	67.9 (34.8-109.6)	5876 (3025.9-9570.3)	59.6 (30.6-97.9)	-0.42 (-0.46--0.38)
Malaysia		9172.9 (5013-13667.8)	74.4 (40.4-109.5)	20000.1 (10900.3-31150)	57.3 (31.4-90.5)	-1.04 (-1.15--0.92)
Maldives		109.8 (62-163.6)	97.5 (54.5-144.9)	421.3 (229.5-681.7)	81.3 (44.4-131)	-0.65 (-0.79--0.5)
Mali		1615.7 (796.2-2621.3)	31.9 (15.7-52)	5288.7 (2603.6-8994.1)	44.1 (21.8-74.4)	1.2 (1.04-1.35)

Malta	1097.2 (608.1-1663.2)	254 (141.5-383)	1374.7 (731.1-2176.2)	183.7 (99.3-290.4)	-1 (-1.1--0.9)
Marshall Islands	19.9 (10-32.4)	83.1 (41.7-131.7)	29.2 (15.7-47.7)	78.7 (41.5-128.8)	-0.19 (-0.21--0.18)
Mauritania	648.4 (330.3-1036)	51.9 (26.7-83)	1088.2 (546.9-1823.8)	38.9 (19.7-65.4)	-1.12 (-1.21--1.02)
Mauritius	742.4 (397.3-1130.2)	81.3 (43.3-121.9)	1076.8 (591.6-1733.8)	62.9 (34.5-102.2)	-0.7 (-0.81--0.6)
Mexico	54047.7 (29063.3-85217.2)	98.9 (53.7-155.9)	87793.1 (43402.9-136794.9)	63.3 (31.3-98.5)	-1.56 (-1.7--1.42)
Micronesia (Federated States of)	86.8 (46.7-132)	142.4 (78.6-220.3)	133 (74.8-212.6)	140.2 (78.6-222)	-0.04 (-0.12--0.04)
Monaco	106.4 (53.6-169.4)	231.4 (117.2-371.4)	114.5 (60.1-191.1)	190.8 (103.7-321.7)	-0.67 (-0.7--0.64)
Mongolia	1798.1 (984.8-2769.9)	142.2 (75.9-220.6)	4566.8 (2438.5-6965.8)	143.4 (76.4-219.4)	0.08 (0.04-0.12)
Montenegro	2340.9 (1315.4-3645.6)	359.8 (200.3-559.9)	3206.1 (1770.2-4905.3)	363.7 (202-542.5)	0.07 (-0.03-0.18)
Morocco	18133.1 (9775.6-27363.5)	103 (54.6-157.6)	30255.6 (16761.5-49081.6)	76.8 (42.5-124.7)	-1.03 (-1.09--0.97)
Mozambique	3798.9 (1890.9-6242.4)	48.5 (24-79.6)	8216 (4201.9-13717.7)	52.4 (27-85.1)	0.32 (-0.04-0.69)
Myanmar	27078.6 (14864.7-40671.8)	99.6 (54.2-149.5)	30338.4 (15784.4-47573.9)	55 (28.6-85.8)	-2.09 (-2.22--1.95)
Namibia	699.9 (342.1-1122.7)	89.3 (43.4-145.4)	1263.4 (638.2-2128.1)	65.5 (33.4-110.4)	-1.14 (-1.23--1.05)
Nauru	9.6 (5.2-14.8)	153.1 (84.3-238)	12.7 (7-19.2)	146.6 (79-222.9)	-0.15 (-0.22--0.08)
Nepal	30590.2 (17239.2-46381.6)	263.2 (146.9-400.3)	39978.8 (22624.4-63534.6)	149.2 (84.6-237.5)	-2.1 (-2.32--1.88)
Netherlands	43754 (24303.5-65123.9)	245.1 (137-362.5)	43949.1 (22257.7-67673.1)	172.5 (86.7-261.1)	-1.04 (-1.12--0.96)
New Zealand	10119.5 (5283.5-15565.6)	273.1 (143.1-417.1)	11019 (5442.7-17037.2)	168.6 (83.3-257.9)	-1.58 (-1.64--1.53)

Nicaragua	1628 (792.6-2903.2)	77.6 (38-137.1)	3273.3 (1581.8-5718.7)	54.5 (26.6-95.4)	-0.9 (-1--0.79)
Niger	1084.6 (524.5-1830.6)	26 (12.5-44.3)	4077.2 (1827.6-7360.7)	35.5 (16.4-63.4)	1.05 (1-1.09)
Nigeria	21418.1 (10096.1-38247.9)	40.4 (18.8-71.9)	27622 (12571.5-50724.9)	21.1 (9.7-38.5)	-2.18 (-2.32--2.04)
Niue	1.9 (1-3)	93.3 (48-148.8)	1.7 (0.9-2.9)	85.9 (44-145.4)	-0.36 (-0.44--0.29)
North Macedonia	6330.7 (3511.6-9857.6)	305.4 (169.7-473.2)	8346.4 (4507.9-12781.7)	319.1 (177.8-482.1)	0.18 (0.13-0.23)
Northern Mariana Islands	43.9 (21.8-72.4)	116.7 (60-193)	61.1 (32.5-101.2)	100.7 (53.7-168.2)	-0.53 (-0.58--0.49)
Norway	11679.5 (6696.6-18403.9)	229.9 (133.1-363)	11131.2 (5480.1-18164.2)	153.1 (74.7-248.9)	-1.57 (-1.67--1.47)
Oman	1347.7 (708.2-2252.4)	102.2 (52.9-163.9)	3278.6 (1689.3-5431.2)	66.9 (34.5-111.1)	-1.15 (-1.4--0.9)
Pakistan	62362.7 (33698-98454)	99.1 (53.4-156.5)	112746.6 (60376.7-195996.5)	74.4 (39.9-125.4)	-0.95 (-1.04--0.87)
Palau	11.6 (5.8-18.6)	93.3 (46.9-149.2)	21.1 (10.9-35.2)	86.8 (44.8-145.3)	-0.33 (-0.4--0.27)
Palestine	1279.7 (682.3-1958)	123.2 (65.3-192.5)	4427.9 (2430.8-6789.1)	122.2 (67-187.8)	-0.15 (-0.2--0.1)
Panama	1324.3 (627.3-2251.8)	75.6 (35.8-127.9)	1400.5 (626-2404.4)	32.8 (14.7-56.2)	-3.03 (-3.2--2.86)
Papua New Guinea	2742.8 (1449.3-4228.8)	106.1 (54-165.3)	7592.1 (3981-11828.8)	96.6 (50.5-154.1)	-0.39 (-0.46--0.33)
Paraguay	3774.3 (1951.2-5810.6)	144 (74.2-219.4)	6522.1 (3451.2-11041.7)	108.9 (57.7-184.7)	-1.04 (-1.12--0.95)
Peru	6858.7 (3480.6-11604.9)	47.4 (24.1-79.3)	14573.3 (7411-24354.8)	39.3 (20-66)	-0.83 (-0.92--0.73)
Philippines	47714.1 (26453.3-72262.2)	124.9 (70.2-189.2)	75470.6 (38768.4-123695.3)	77.8 (39.7-126.3)	-1.64 (-1.79--1.48)

Poland	168461.5 (93468.3-249268.7)	379.7 (212.5-558.5)	166293.6 (85033.4-249691.2)	294.7 (150-441.6)	-0.81 (-0.86--0.76)
Portugal	23818.4 (12518.6-36561.9)	200.6 (105.4-311.4)	28337.4 (14902.4-43083.1)	189.8 (100-286.1)	-0.07 (-0.13--0.01)
Puerto Rico	2869.4 (1408.6-4752.2)	79.4 (38.9-132.4)	3703.1 (1730.7-6063.4)	71 (34.2-114.6)	-0.4 (-0.43--0.38)
Qatar	416.5 (226.6-657.5)	102.4 (53.1-163.8)	3558.5 (1844.8-5777.8)	96.6 (50.8-157.5)	-0.08 (-0.18-0.03)
Republic of Korea	70919.8 (41138.5-107986.6)	171.7 (97.6-262.8)	108465.4 (56854.8-176365.2)	139.7 (73.1-224.3)	-0.68 (-0.73--0.62)
Republic of Moldova	6837 (3798.8-10777.8)	145.7 (81.4-228.6)	8801.8 (4839.8-13648.2)	166.8 (91.1-255.8)	0.47 (0.42-0.52)
Romania	80367.2 (44228.5-125024.4)	297.8 (163.7-460.6)	75399.6 (40953.9-115280.6)	273.3 (152-414.8)	-0.43 (-0.51--0.36)
Russian Federation	305213.3 (164620-457203.3)	172.6 (92.6-255.8)	447638.2 (234013.9-676362)	208.5 (111.1-313.9)	0.79 (0.63-0.95)
Rwanda	3333.4 (1627.6-5407.7)	95.5 (47.3-153.8)	7412.2 (3641-12477.6)	93.5 (45.7-161.1)	-0.09 (-0.27-0.09)
Saint Kitts and Nevis	15.4 (7.3-28.6)	48 (22.7-87.8)	21.2 (9.8-40.7)	35.4 (16.4-68.7)	-1.21 (-1.33--1.09)
Saint Lucia	69.8 (34.5-119.4)	75 (37-128.9)	142.1 (73.4-265.5)	62.5 (32.3-117)	-0.93 (-1.1--0.75)
Saint Vincent and the Grenadines	42.5 (21.6-71)	58.2 (29.6-96.9)	70.9 (36-129.4)	51 (25.5-93)	-0.44 (-0.47--0.42)
Samoa	141.3 (72.7-218.3)	139.4 (71.8-215.5)	222.6 (122.1-349.5)	128.3 (70.3-202.4)	-0.51 (-0.62--0.4)
San Marino	58.4 (32.3-93.1)	225.8 (125-361.3)	93.3 (49.7-159.8)	171.6 (93.2-293.1)	-1 (-1.06--0.93)
Sao Tome and Principe	16.9 (8.3-29.7)	24.6 (12-42.9)	44.4 (21.5-79)	28.5 (13.7-51.7)	0.41 (0.15-0.67)
Saudi Arabia	6275.3 (3160.6-10189.7)	61.1 (30.8-101.4)	28374.6 (14580.8-44546.4)	83.7 (43.7-132.6)	0.77 (0.62-0.92)

Senegal	2453.2 (1328.4-3831.9)	59.9 (32.3-93)	3662.8 (1795-5884.3)	34.1 (16.8-54.9)	-2.04 (-2.19--1.88)
Serbia	38466.5 (21970.8-57297.8)	347.7 (198.3-519)	44145.3 (23086.8-67007.1)	345.9 (181.2-522.3)	-0.05 (-0.14-0.05)
Seychelles	44.3 (23.1-70.6)	77.5 (40.4-122.7)	88.8 (47.4-146.8)	69.4 (36.5-114.2)	-0.48 (-0.56--0.41)
Sierra Leone	2182 (1158-3354.4)	83.6 (43.6-127.4)	2733.2 (1512.2-4408.9)	55.4 (30.5-90.3)	-1.35 (-1.4--1.29)
Singapore	2689.2 (1364.8-4338.7)	86.4 (43.5-139.1)	6227 (2941.4-10435.3)	72.7 (34.3-122.8)	-0.22 (-0.33--0.12)
Slovakia	15832.2 (8675.5-24361.1)	275.6 (152.1-420.2)	20337.7 (11001.2-31694.3)	262.2 (143.7-409.9)	-0.03 (-0.08-0.02)
Slovenia	6104.6 (3246.2-9625.6)	260.3 (138.6-407)	8231.2 (4289-13021.1)	268.2 (141.9-412.8)	0.3 (0.18-0.42)
Solomon Islands	231.4 (126.9-362.3)	125 (68.6-191)	787.7 (429.3-1254.3)	134.5 (72.4-215.8)	0.44 (0.34-0.53)
Somalia	2159.1 (1063.5-3684.5)	52.2 (26.1-91)	4856.1 (2413.1-8338.1)	46 (23.1-77.4)	-0.41 (-0.42--0.4)
South Africa	30750.2 (16926.5-47369.9)	123.9 (66.8-192.6)	44803.9 (23218.5-69889.3)	75.1 (38.8-117.5)	-1.52 (-1.77--1.27)
South Sudan	915.6 (427.4-1561.6)	31.6 (14.9-54.1)	2057 (1007-3531.6)	36.1 (17.8-62.5)	0.63 (0.55-0.72)
Spain	86458.5 (48098.8-126491.2)	195.5 (109-283.6)	108551.4 (55642-166624.9)	156.6 (80.6-236.3)	-0.35 (-0.47--0.22)
Sri Lanka	9403.5 (5241.2-14595.4)	70.8 (38.5-108.2)	9553.2 (4688.5-15046.7)	36.7 (18-57.2)	-2.12 (-2.16--2.07)
Sudan	6205.4 (3070.9-10201)	52.4 (26.1-84.4)	15537.5 (7851.5-26817.9)	54.8 (27.8-94.4)	0.07 (-0.08-0.21)
Suriname	306.4 (166.8-493.9)	103.4 (56.3-166.5)	539.7 (282.2-931)	81.8 (42.7-140.9)	-0.92 (-1.06--0.78)
Sweden	15083.2 (8234.7-24592)	129.1 (71.8-204.2)	21401 (10703.9-34122.6)	142.1 (70.5-228.2)	0.25 (0.04-0.46)

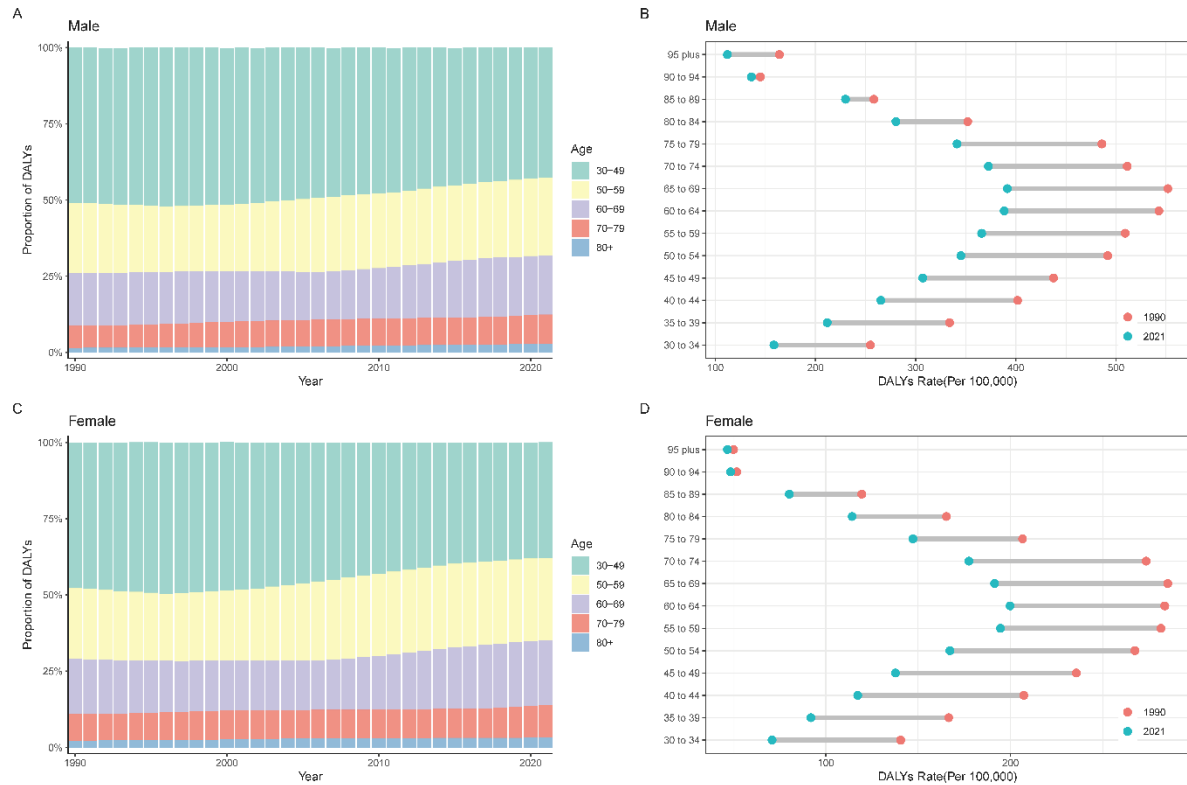
Switzerland		23973.2 (13338.2- 35033.4)	279.5 406.8)	(156.3-	28429.6 (14772.8- 44461.3)	222 343.9)	(116.8-	-0.67 0.56)	(-0.78--
Syrian Arab Republic		9508.2 (4910.2- 14848.2)	141.6 218)	(73.1-	20245.9 (10744.9- 30998.9)	117.9 181.6)	(62-	-0.67 0.58)	(-0.77--
Taiwan (Province of China)		22666.2 (12099.2- 33465.6)	120.9 179.8)	(64.4-	41092.1 (21725.1- 62881.6)	117.9 179.9)	(63.2-	-0.04 0.09)	(-0.16-
Tajikistan		3567.1 (1892.3- 5590.5)	111.7 172.4)	(59.8-	5367.2 (2758.8- 9433.8)	66.9 117.9)	(34.2-	-1.61 1.53)	(-1.69--
Thailand		35060.2 (20081.6- 52928.6)	79 120.3)	(43.9-	54768.1 (29060.5- 85035)	55.7 85.8)	(29.5-	-1.04 0.9)	(-1.17--
Timor-Leste		362.3 (199.7- 547.1)	82.1 127.4)	(44.7-	665.4 (375.8- 997)	69.2 103.7)	(38.8-	-0.58 0.56)	(-0.61--
Togo		1073.1 (534.1- 1742.2)	63.5 103.5)	(31.4-	2115.8 (1018.1- 3830.1)	38.6 69.5)	(18.6-	-1.94 1.61)	(-2.26--
Tokelau		1.9 (1-3)	146.2 230.1)	(80.7-	2.4 (1.4-3.9)	148.8 237.8)	(85-	0.08 0.14)	(0.01-
Tonga		81.2 (44.2- 128.5)	130.7 206.5)	(70.5-	90.3 (48.6- 141.8)	104 163.3)	(55.9-	-0.83 0.78)	(-0.87--
Trinidad and Tobago		813.8 (427.6- 1344.6)	84.3 138.7)	(44.3-	1456.5 (760.7- 2515.1)	79.9 138.3)	(41.4-	-0.06 0.02)	(-0.1--
Tunisia		7295.9 (3954.9- 10831.8)	124.9 186.9)	(67.4-	15833.3 (8829.6- 24399)	113.2 174.9)	(63.1-	-0.32 0.28)	(-0.37--
Turkey		85652 (48442.7- 125960.2)	197.1 291.6)	(111.2-	162257 (88804- 250014.2)	165.4 254)	(90.8-	-0.59 0.5)	(-0.69--
Turkmenistan		3130.8 (1696.1- 4827.4)	131.8 201.1)	(72.3-	5161.4 (2831.8- 8534.6)	99 163.7)	(54.6-	-1.09 0.92)	(-1.26--
Tuvalu		8.3 (4.1-13.2)	105.3 167.5)	(52.4-	10.3 (5.6-16.3)	103.2 163.9)	(57-	-0.09 0.04)	(-0.15--
Uganda		3929.7 (1991.6- 6453.1)	49.1 80.7)	(24.8-	9721.3 (4889.5- 15900.4)	48 (23.1-78.9)		-0.32 0.09)	(-0.56--
Ukraine		131218.9 (74566.4- 200300)	204.9 314.9)	(115.8-	118928.4 (61772.2- 179715.5)	192.5 291.2)	(99.7-	-0.12 0.07)	(-0.32-

United Arab Emirates	1508.2 (734.2-2375.5)	87.3 (41.9-137.4)	9647.7 (4948.9-15932.1)	59.8 (31.1-102.6)	-1.3 (-1.46--1.14)
United Kingdom	181657 (97569.9-269108.6)	258.7 (139.4-376.7)	175153.5 (91330.9-267709.8)	186 (101.9-279.4)	-0.97 (-1.06--0.88)
United Republic of Tanzania	13184.2 (6971.6-20636.6)	97 (51.3-149.8)	31264.4 (16582.2-49844.4)	86 (45.2-136)	-0.5 (-0.57--0.43)
United States of America	784864.6 (418248.2-1151044.3)	275.3 (147.5-401.4)	835605.4 (405943.7-1268694.9)	191.8 (93.5-285.4)	-0.98 (-1.04--0.93)
United States Virgin Islands	64.8 (32.4-108)	61.3 (30.7-100.8)	61.6 (30.5-99.9)	45.2 (22.2-73.5)	-1.1 (-1.28--0.92)
Uruguay	6296.3 (3382.9-9898.8)	188.2 (102.2-297.7)	7817 (4227.9-11964)	189.3 (101.4-289.3)	-0.13 (-0.22--0.04)
Uzbekistan	11596.4 (6156.9-17814.6)	88.9 (46.6-137.8)	29098.5 (15387.3-48327.7)	86.7 (45.4-142.1)	-0.01 (-0.21-0.19)
Vanuatu	80.3 (41-126.6)	92 (47-141.6)	162.8 (83.4-269.8)	69.5 (35.8-115.6)	-1.17 (-1.28--1.07)
Venezuela (Bolivarian Republic of)	13989.6 (7018.7-23571.6)	108.6 (55.2-182.5)	18989.9 (8344.5-33275)	59.5 (26.1-104.1)	-1.96 (-2.08--1.83)
Viet Nam	39902.7 (22827.2-60396.3)	90.3 (51.3-136.3)	87763.3 (46505.1-130394.8)	76.3 (40.5-113.5)	-0.59 (-0.63--0.55)
Yemen	9746.3 (5127.1-15266.4)	141.7 (74.5-217.3)	24670.5 (12110.3-40218.9)	113.4 (55.5-187.4)	-0.92 (-1.01--0.83)
Zambia	2318.2 (1126.6-3648.5)	67.9 (32.6-109.8)	4237.6 (2230.8-6975.7)	46.8 (23.9-77.1)	-1.58 (-1.74--1.42)
Zimbabwe	4983.3 (2588.2-7587.3)	99.1 (51.1-152.1)	6492.2 (3293.7-10148.8)	66.7 (34.4-103.7)	-1.29 (-1.35--1.24)

Note: Data in parentheses represent the 95% uncertainty intervals (UIs). Rates are reported per 100,000 population.

Abbreviations: ASMR, age-standardized mortality rate; ASDR, age-standardized disability-adjusted life years rate; UI, uncertainty interval.

2. Supplementary Figure 1. Sex-specific trends in the proportion and age-specific DALY rates of low back pain caused by smoking, 1990 – 2021

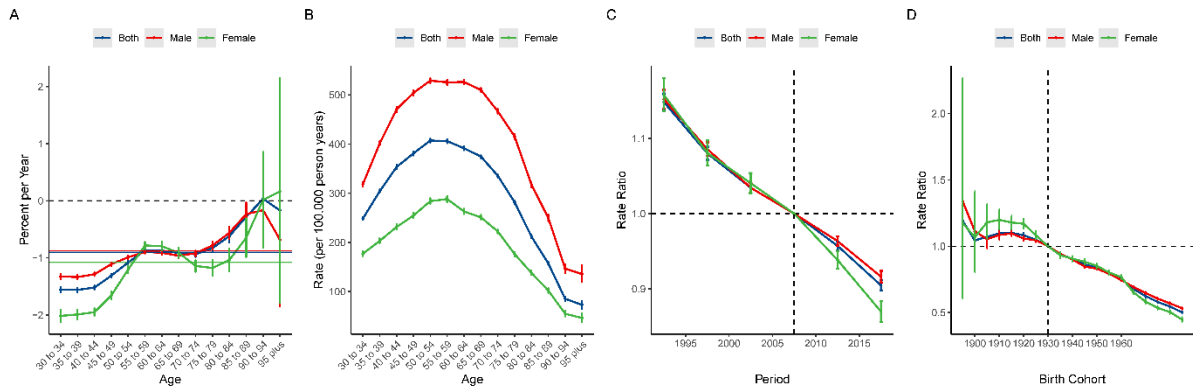


(A) and (C) present the temporal trends in the age composition (proportion) of total DALYs for males and females, respectively, from 1990 to 2021. The distinct colors within the 100% stacked bar charts represent different broad age categories (30-49, 50-59, 60-69, 70-79, and 80+ years). (B) and (D) illustrate the changes in age-specific DALY rates (per 100,000 population) across detailed 5-year age groups for males and females. The dumbbell plots compare the burden between the baseline year 1990 (red dots) and the recent year 2021 (teal dots), with the connecting grey lines indicating the magnitude and direction of the change over the three decades. DALYs: Disability-adjusted life years.

Abbreviations: DALYs, disability-adjusted life years.

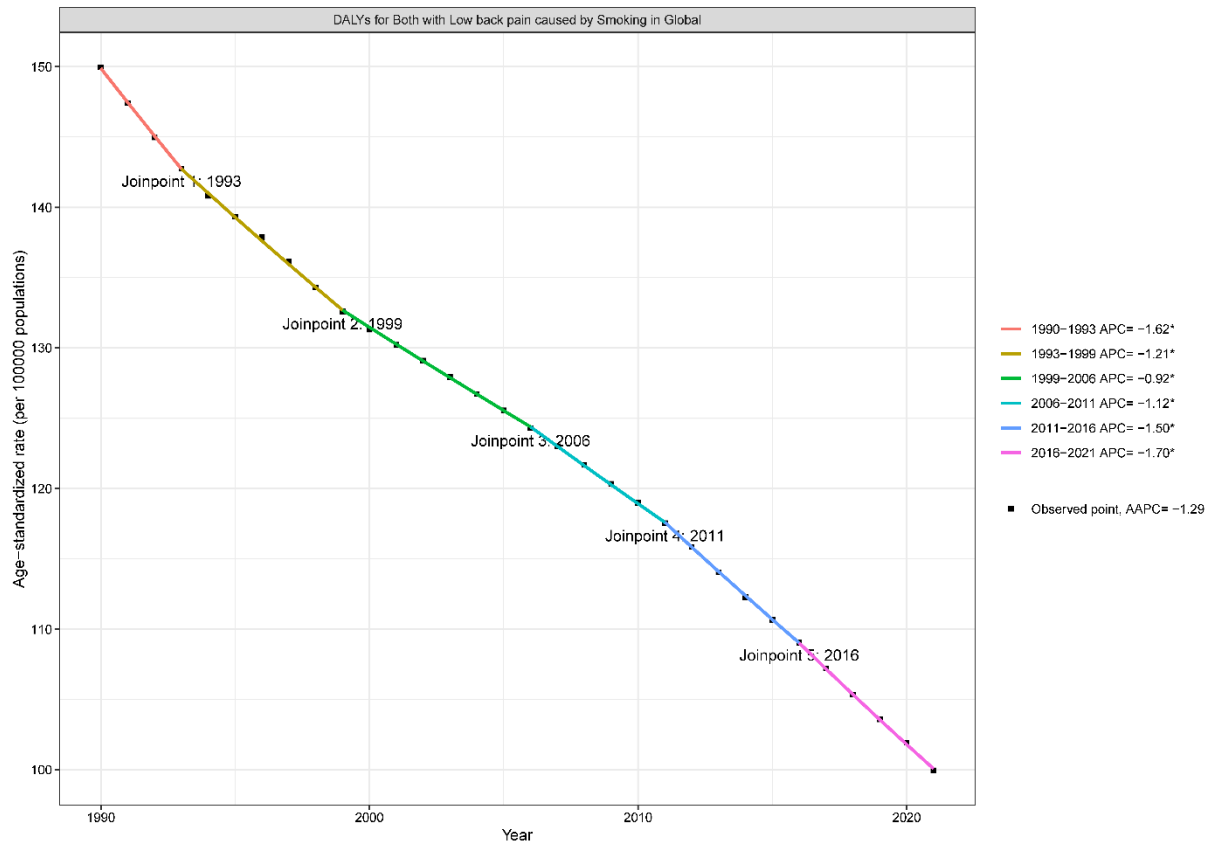
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3. Supplementary Figure 2. Age-period-cohort effects on the DALY rates of low back pain caused by smoking by sex



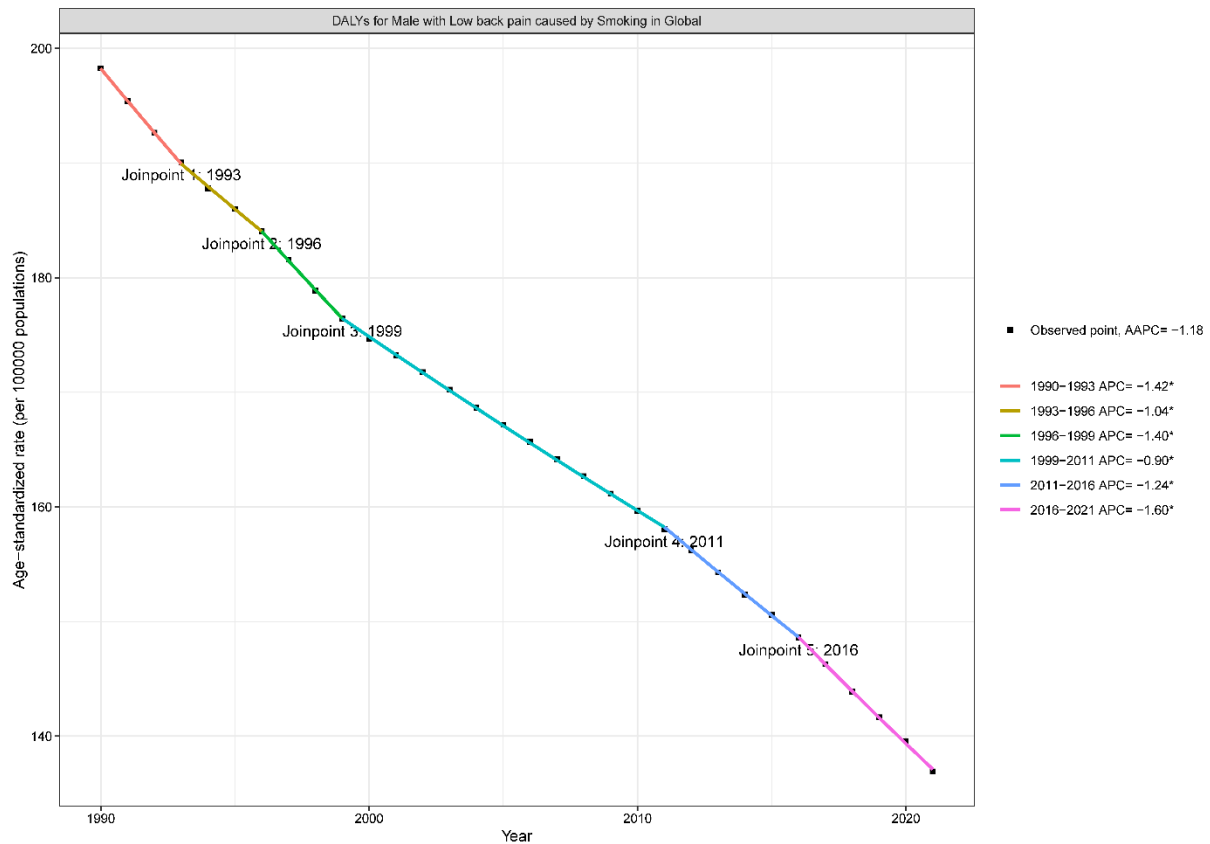
(A) Local drift values, representing the annual percentage changes in the DALY rates across specific age groups. The horizontal dashed line at 0 indicates no percentage change. (B) Longitudinal age curves, indicating the expected age-specific DALY rates (per 100,000 person-years) in the reference cohort, adjusted for period effects. (C) Period relative risks (Rate Ratios) of DALYs adjusted for age and cohort effects. The vertical dashed line indicates the reference period (2007.5), and the horizontal dashed line represents a rate ratio of 1.0. (D) Cohort relative risks (Rate Ratios) of DALYs adjusted for age and period effects. The vertical dashed line indicates the reference birth cohort (1930), and the horizontal dashed line represents a rate ratio of 1.0. In all panels, the blue lines represent both sexes, the red lines represent males, and the green lines represent females. The error bars indicate the 95% confidence intervals (CIs). Abbreviations: DALYs, disability-adjusted life years; CIs, confidence intervals.

4. Supplementary Figure 3. Joinpoint regression analysis of the age-standardized DALY rates for low back pain caused by smoking globally (Both sexes), 1990 – 2021



The black square markers denote the observed age-standardized DALY rates (per 100000 population) for each year. The solid colored lines represent the modeled trend segments fitted by the Joinpoint regression analysis. Five distinct joinpoints (inflection points) were identified during the 32-year study period: 1993, 1999, 2006, 2011, and 2016. The embedded legend displays the estimated Annual Percent Change (APC) for each specific trend segment and the overall Average Annual Percent Change (AAPC) for the entire observation period (AAPC = -1.29). An asterisk (*) indicates that the APC is statistically significantly different from zero ($P < 0.05$). Abbreviations: DALYs, disability-adjusted life years; APC, annual percent change; AAPC, average annual percent change.

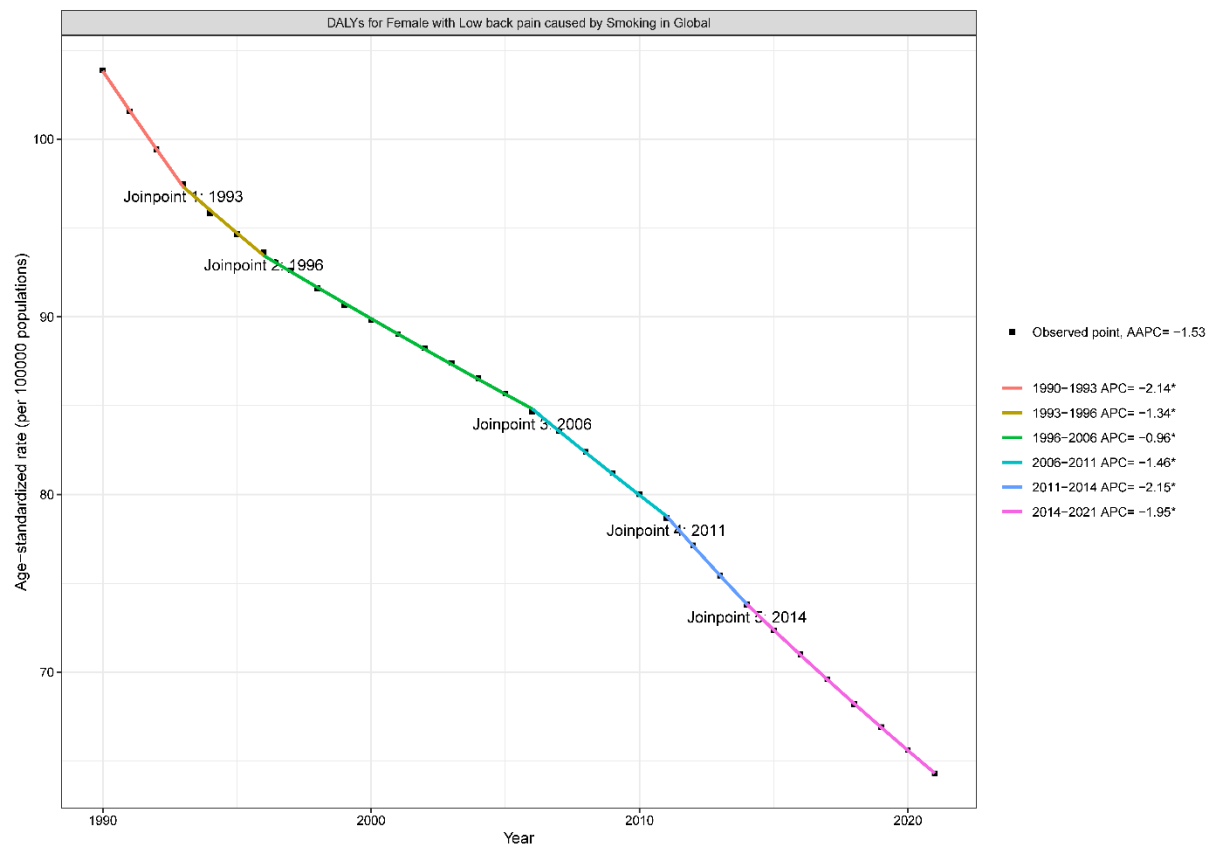
5. Supplementary Figure 4. Joinpoint regression analysis of the age-standardized DALY rates for low back pain caused by smoking globally (Male), 1990 – 2021



The black square markers denote the observed age-standardized DALY rates (per 100000 population) for males each year. The solid colored lines represent the modeled trend segments fitted by the Joinpoint regression analysis. Five distinct joinpoints (inflection points) were identified during the 32-year study period: 1993, 1996, 1999, 2011, and 2016. The embedded legend displays the estimated Annual Percent Change (APC) for each specific trend segment and the overall Average Annual Percent Change (AAPC) for the entire observation period (AAPC = -1.18). An asterisk (*) indicates that the APC is statistically significantly different from zero ($P < 0.05$).

Abbreviations: DALYs, disability-adjusted life years; APC, annual percent change; AAPC, average annual percent change.

6. Supplementary Figure 5. Joinpoint regression analysis of the age-standardized DALY rates for low back pain caused by smoking globally (Female), 1990 – 2021



The black square markers denote the observed age-standardized DALY rates (per 100000 population) for females each year. The solid colored lines represent the modeled trend segments fitted by the Joinpoint regression analysis. Five distinct joinpoints (inflection points) were identified during the 32-year study period: 1993, 1996, 2006, 2011, and 2014. The embedded legend displays the estimated Annual Percent Change (APC) for each specific trend segment and the overall Average Annual Percent Change (AAPC) for the entire observation period (AAPC = -1.53). An asterisk (*) indicates that the APC is statistically significantly different from zero ($P < 0.05$).

Abbreviations: DALYs, disability-adjusted life years; APC, annual percent change; AAPC, average annual percent change.