

Supporting Information

Title: Burden of cataract in the Western Pacific Region from 1990 to 2023: an analysis based on the Global Burden of Disease study

Author

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Table S1. Characteristics of GBD data extraction and analytical framework for cataract burden assessment in the Western Pacific Region

Analysis	Variable	Description
Burden estimation	GBD module	Causes
	Measure	Prevalence; DALYs
	Metric	Number; Rate
	Cause	Cataract
	Age	Under 5; 5-9; 10-14; 15-19; 20-24; 25-29; 30-34; 35-39; 40-44; 45-49; 50-54; 55-59; 60-64; 65-69; 70-74; 75-79; 80-84; 85-89; 90-94; Above 95
	Sex	Male; Female; Both sexes
	Location	Global; Region of the Americas; South-East Asia Region; African Region; European Region; Eastern Mediterranean Region; Western Pacific Region; American Samoa; Australia; Brunei Darussalam; Cambodia; China; Cook Islands; Fiji; Guam; Japan; Kiribati; Lao People's Democratic Republic; Malaysia; Marshall Islands; Micronesia (Federated States of); Mongolia; Nauru; New Zealand; Niue; Northern Mariana Islands; Palau; Papua New Guinea; Philippines; Republic of Korea; Samoa; Singapore; Solomon Islands;

Risk attribution	Tokelau; Tonga; Tuvalu; Vanuatu; and Viet Nam	
	Year	1990-2023
	GBD module	Risk factors
	Measure	DALYs
	Metric	Percentage
	Cause	Cataract
	Age	Age-standardized
	Sex	Both sexes
	Location	Global; Region of the Americas; South-East Asia Region; African Region; European Region; Eastern Mediterranean Region; Western Pacific RegionAmerican Samoa; Australia; Brunei Darussalam; Cambodia; China; Cook Islands; Fiji; Guam; Japan; Kiribati; Lao People's Democratic Republic; Malaysia; Marshall Islands; Micronesia (Federated States of); Mongolia; Nauru; New Zealand; Niue; Northern Mariana Islands; Palau; Papua New Guinea; Philippines; Republic of Korea; Samoa; Singapore; Solomon Islands; Tokelau; Tonga; Tuvalu; Vanuatu; and Viet Nam
	Year	1990-2023

Table S2. DALYs of cataract in WHO regions in 1990 and 2023.

Location	1990		2023		EAPC (95% CI)
	Number (95% UI)	ASR (95% UI)	Number (95% UI)	ASR (95% UI)	
Global	4039175.17 (2956869.26 ~ 5425941.6)	106.33 (77.78 ~ 142.56)	7119952.54 (5246686.84 ~ 9667011.52)	77.79 (57.31 ~ 105.44)	-0.86 (-0.91 to -0.81)
Region of the Americas	286369 (209176.83 ~ 386863.29)	47.43 (34.71 ~ 63.89)	661896.22 (487908.07 ~ 884759.98)	46.34 (34.05 ~ 61.9)	0.11 (0.05 to 0.17)
South-East Asia Region	1564085.84 (1153202.44 ~ 2110447.61)	298.25 (218.84 ~ 401.24)	2648955.32 (1942824.57 ~ 3579179.2)	173.32 (127.44 ~ 233.61)	-1.54 (-1.62 to -1.45)
African Region	274698.06 (200468.64 ~ 374496.69)	138.11 (100.86 ~ 189.85)	526640.08 (385040.8 ~ 708343.21)	102.01 (74.46 ~ 138.51)	-0.85 (-0.95 to -0.74)
European Region	313490.34 (222670.93 ~ 417063.14)	29.4 (21.06 ~ 39.23)	422528.84 (303621.87 ~ 563209.62)	23.79 (17.09 ~ 31.71)	-0.7 (-0.72 to -0.67)
Eastern Mediterranean Region	286935.38 (206202.37 ~ 388016.59)	182.59 (131.17 ~ 247.14)	515799.16 (376811.31 ~ 696184.13)	119.27 (87.19 ~ 160.67)	-1.48 (-1.67 to -1.3)
Western Pacific Region	1304934.18 (953013.24 ~ 1777980.72)	115.47 (84.24 ~ 156.24)	2327090.24 (1709857.14 ~ 3173887.4)	69.55 (51.05 ~ 94.8)	-1.38 (-1.49 to -1.27)

Note: ASR: Age-Standardized Rate; EAPC: Estimated Annual Percentage Change; UI: Uncertainty Interval.

Table S3. ASDR and EAPC of ASDR in the Western Pacific regions, 1990-2023.

Location	ASDR (95% UI)		EAPC of ASDR (95% CI)
	1990	2023	
Nauru	130.32 (93.95 ~ 176.13)	98.96 (71.47 ~ 133.67)	-0.81 (-0.92 to -0.7)
Mongolia	53.89 (38.64 ~ 73.36)	33.45 (23.88 ~ 45.72)	-1.47 (-1.52 to -1.43)
New Zealand	10.13 (7.3 ~ 13.37)	7.52 (5.48 ~ 9.86)	-0.89 (-0.92 to -0.87)
Northern Mariana Islands	97.95 (70.96 ~ 131.49)	75.28 (54.98 ~ 102.84)	-0.74 (-0.78 to -0.71)
Niue	123.61 (90.25 ~ 169.33)	84.38 (61.46 ~ 114.78)	-1.15 (-1.16 to -1.13)
Palau	110.06 (79.75 ~ 151.17)	79.8 (58.17 ~ 108.01)	-0.93 (-0.96 to -0.91)
Micronesia (Federated States of)	153.52 (111.62 ~ 208.91)	103.22 (75.36 ~ 139.32)	-1.18 (-1.2 to -1.17)
Brunei Darussalam	20.76 (14.66 ~ 29.23)	12.69 (9.31 ~ 17.46)	-1.44 (-1.48 to -1.41)

China	123.4 (88.69 ~ 167.62)	65.38 (47.72 ~ 89.49)	-1.52 (-1.69 to -1.34)
Australia	8.6 (6.16 ~ 11.7)	7.03 (5.13 ~ 9.37)	-0.54 (-0.6 to -0.48)
Cambodia	342.57 (248.07 ~ 469.88)	224.64 (163.89 ~ 300.16)	-1.5 (-1.62 to -1.38)
American Samoa	113.29 (83.03 ~ 153.83)	78.9 (57.79 ~ 106.34)	-1.06 (-1.09 to -1.03)
Cook Islands	110.32 (80.6 ~ 150.46)	70.3 (51.03 ~ 94.96)	-1.33 (-1.37 to -1.29)
Tonga	139.2 (97.25 ~ 192.36)	85.72 (60.48 ~ 119.71)	-1.25 (-1.37 to -1.14)
Viet Nam	138.87 (99.39 ~ 183.16)	101.28 (73.91 ~ 136.75)	-1.19 (-1.24 to -1.13)
Vanuatu	96.46 (71.01 ~ 131.2)	74.4 (54.51 ~ 101.44)	-0.77 (-0.81 to -0.74)
Tuvalu	165.56 (119.3 ~ 224.08)	104.04 (76.07 ~ 140.6)	-1.33 (-1.36 to -1.3)

Samoa	134.16 (98.33 ~ 182.17)	94.06 (68.98 ~ 126.69)	-1.04 (-1.05 to -1.02)
Papua New Guinea	220.92 (161.08 ~ 300.68)	168.83 (124.48 ~ 228.42)	-0.87 (-1.01 to -0.74)
Singapore	21.99 (15.19 ~ 29.99)	14.18 (10.05 ~ 19.38)	-1.36 (-1.45 to -1.26)
Republic of Korea	23.43 (16.65 ~ 31.61)	15.09 (10.53 ~ 20.57)	-1.24 (-1.32 to -1.17)
Philippines	147.47 (107.22 ~ 197.32)	115.15 (84.95 ~ 154.3)	-0.62 (-0.67 to -0.57)
Tokelau	131.15 (95.49 ~ 179.18)	83.52 (61.53 ~ 112)	-1.42 (-1.45 to -1.38)
Solomon Islands	166.15 (120.09 ~ 224.76)	122.52 (89.9 ~ 164.2)	-0.89 (-0.91 to -0.86)
Japan	10.96 (8.09 ~ 14.81)	8.68 (6.39 ~ 11.71)	-0.65 (-0.71 to -0.58)
Lao People's Democratic Republic	56.31 (39.77 ~ 75.73)	42.87 (30.28 ~ 58.62)	-0.81 (-0.87 to -0.74)

Kiribati	155.13 (110.51 ~ 208.78)	113.95 (82.28 ~ 153.96)	-0.91 (-0.93 to -0.89)
Malaysia	226.1 (167.27 ~ 307.39)	147.92 (108.71 ~ 202.27)	-1.29 (-1.38 to -1.2)
Fiji	151.31 (111.13 ~ 204.06)	108.63 (79.97 ~ 146.34)	-0.93 (-1.04 to -0.83)
Marshall Islands	154.32 (112.15 ~ 209.82)	93.68 (68.91 ~ 128.42)	-1.47 (-1.54 to -1.41)
Guam	101.74 (74.55 ~ 138.42)	75.8 (55.02 ~ 101.73)	-0.89 (-0.94 to -0.83)

Note: ASDR: Age-standardized DALY rate; EAPC: Estimated Annual Percentage Change; UI: Uncertainty Interval.

Table S4. Prevalence of cataract in the Western Pacific regions by gender group in 1990 and 2023.

Age	Gender	1990		2023		EAPC (95% CI)
		Number (95% UI)	ASR (95% UI)	Number (95% UI)	ASR (95% UI)	
20 to 24	Male	2966.51 (1716.7 ~ 4736.81)	3.23 (1.87 ~ 5.16)	1554.49 (956.76 ~ 2500.58)	2.3 (1.41 ~ 3.7)	-1.46 (-1.63 to -1.28)
	Female	2865.47 (1659.39 ~ 4680.74)	3.2 (1.85 ~ 5.23)	1532.66 (926.76 ~ 2447.08)	2.5 (1.51 ~ 4)	-1.61 (-1.91 to -1.32)
	Both	5831.98 (3396.17 ~ 9378.47)	3.22 (1.87 ~ 5.17)	3087.15 (1890.49 ~ 4925.99)	2.4 (1.47 ~ 3.82)	-1.55 (-1.77 to -1.33)
25 to 29	Male	15311.69 (9831.93 ~ 24074.63)	19.49 (12.51 ~ 30.64)	9484.72 (5842.9 ~ 15271.93)	13.12 (8.08 ~ 21.12)	-1.64 (-1.83 to -1.44)
	Female	14510.11 (9012.62 ~ 21690.17)	18.97 (11.78 ~ 28.36)	8898.32 (5628.76 ~ 13624.48)	13.57 (8.59 ~ 20.78)	-1.66 (-1.89 to -1.44)
	Both	29821.8 (18868.87 ~ 45566.16)	19.23 (12.17 ~ 29.38)	18383.03 (11623.28 ~ 28877.76)	13.33 (8.43 ~ 20.95)	-1.65 (-1.85 to -1.45)
30 to 34	Male	33197.03 (23345.32 ~ 46098.67)	50.16 (35.27 ~ 69.65)	29124.63 (20187.06 ~ 40122.75)	33.3 (23.08 ~ 45.87)	-1.59 (-1.73 to -1.45)

35 to 39	Female	31509.13 (22618.92 ~ 44011.42)	50.37 (36.16 ~ 70.35)	26910.35 (18926.07 ~ 37032.24)	33.47 (23.54 ~ 46.06)	-1.65 (-1.77 to -1.53)
	Both	64706.15 (46295.01 ~ 90303.38)	50.26 (35.96 ~ 70.14)	56034.98 (39204.02 ~ 77327.55)	33.38 (23.36 ~ 46.07)	-1.62 (-1.74 to -1.49)
	Male	72395.29 (54346.78 ~ 91927.86)	111.36 (83.6 ~ 141.41)	69639.73 (49157.01 ~ 87785.89)	77.08 (54.41 ~ 97.17)	-1.39 (-1.52 to -1.26)
	Female	68337.53 (51311.52 ~ 86568.64)	110.61 (83.05 ~ 140.11)	67434.6 (47576.58 ~ 85407.25)	78.74 (55.55 ~ 99.73)	-1.33 (-1.46 to -1.21)
	Both	140732.82 (106065.93 ~ 177120.76)	110.99 (83.65 ~ 139.69)	137074.33 (96675.52 ~ 173052.22)	77.89 (54.93 ~ 98.33)	-1.36 (-1.48 to -1.24)
	Male	127733.03 (98541.19 ~ 158779.94)	251.41 (193.95 ~ 312.52)	135499.53 (99865.22 ~ 173394.28)	180.35 (132.92 ~ 230.78)	-1.38 (-1.5 to -1.25)
40 to 44	Female	122105.89 (94253.04 ~ 153179.56)	257.21 (198.54 ~ 322.66)	141231.48 (104441.57 ~ 181447.45)	197.08 (145.74 ~ 253.2)	-1.2 (-1.34 to -1.05)
	Both	249838.92 (190538.88 ~ 310597.44)	254.21 (193.87 ~ 316.03)	276731.02 (204243.72 ~ 355048.43)	188.52 (139.14 ~ 241.87)	-1.28 (-1.42 to -1.15)

45 to 49	Male	232383.15 (183500.08 ~ 289374.85)	579.19 (457.35 ~ 721.24)	345478.6 (260701.2 ~ 455036.19)	449.55 (339.24 ~ 592.11)	-1.11 (-1.26 to -0.95)
	Female	242985.94 (191702.3 ~ 303160.22)	646.67 (510.19 ~ 806.82)	388674.7 (297761.08 ~ 501855.02)	519.95 (398.33 ~ 671.36)	-0.97 (-1.11 to -0.82)
	Both	475369.09 (374533.93 ~ 592422.58)	611.82 (482.04 ~ 762.48)	734153.3 (556516.24 ~ 956231.01)	484.26 (367.09 ~ 630.75)	-1.03 (-1.18 to -0.88)
50 to 54	Male	382912.91 (308603.31 ~ 479138.93)	1046.86 (843.7 ~ 1309.94)	734337.9 (576101.13 ~ 959071.18)	867.12 (680.27 ~ 1132.5)	-0.76 (-0.93 to -0.6)
	Female	436026.7 (347775.09 ~ 544539.42)	1273.08 (1015.41 ~ 1589.91)	881979.82 (688819.84 ~ 1143212.64)	1066.37 (832.82 ~ 1382.21)	-0.71 (-0.85 to -0.57)
	Both	818939.61 (656592.92 ~ 1016557.76)	1156.25 (927.04 ~ 1435.27)	1616317.71 (1264079.4 ~ 2103656.02)	965.57 (755.15 ~ 1256.7)	-0.73 (-0.88 to -0.57)
55 to 59	Male	556219.07 (455609.47 ~ 683472.85)	1710.43 (1401.05 ~ 2101.75)	1192728.19 (943241.15 ~ 1521186.81)	1492.45 (1180.27 ~ 1903.44)	-0.52 (-0.65 to -0.39)
	Female	684027.64 (561957.3 ~ 840535.15)	2202.84 (1809.72 ~ 2706.85)	1551435.23 (1225789.78 ~ 1983860.98)	1920.85 (1517.66 ~ 2456.24)	-0.53 (-0.66 to -0.41)

60 to 64	Both	1240246.71 (1018946.57 ~ 1524879.07)	1950.95 (1602.84 ~ 2398.69)	2744163.41 (2170069.82 ~ 3511665.51)	1707.78 (1350.5 ~ 2185.42)	-0.52 (-0.64 to -0.39)
	Male	758683.6 (601815.82 ~ 955294.74)	2894.96 (2296.39 ~ 3645.18)	1521228.16 (1164565.7 ~ 1984529.47)	2600.38 (1990.7 ~ 3392.35)	-0.37 (-0.49 to -0.24)
	Female	983938.28 (787823.49 ~ 1249224.76)	3798.7 (3041.55 ~ 4822.89)	2061847.57 (1595658.45 ~ 2671187.21)	3453.46 (2672.62 ~ 4474.06)	-0.34 (-0.48 to -0.2)
	Both	1742621.88 (1395177.69 ~ 2204224.51)	3344.18 (2677.42 ~ 4230.02)	3583075.73 (2757631.09 ~ 4622090.92)	3031.26 (2332.94 ~ 3910.26)	-0.35 (-0.48 to -0.21)
65 to 69	Male	983512.52 (803950.06 ~ 1192260.57)	5149.81 (4209.6 ~ 6242.85)	2271802.24 (1795822.78 ~ 2825991.67)	4375.3 (3458.6 ~ 5442.62)	-0.43 (-0.54 to -0.31)
	Female	1394923.31 (1154977.73 ~ 1677769.99)	6700.47 (5547.9 ~ 8059.11)	3269603.41 (2641055 ~ 4026565.96)	6045.16 (4883.03 ~ 7444.7)	-0.26 (-0.4 to -0.12)
	Both	2378435.83 (1961771.7 ~ 2874642.73)	5958.55 (4914.71 ~ 7201.67)	5541405.65 (4437590.9 ~ 6853694.84)	5227.26 (4186.02 ~ 6465.16)	-0.33 (-0.46 to -0.2)
70 to 74	Male	1007440.56 (825616.17 ~ 1207674.81)	8059.63 (6605.02 ~ 9661.53)	2594615.51 (2066547.85 ~ 3184589.09)	6417.17 (5111.12 ~ 7876.34)	-0.57 (-0.7 to -0.44)

75 to 79	Female	1590343.51 (1333625.08 ~ 1879523.76)	10529.82 (8830.06 ~ 12444.51)	3951144.32 (3210153.84 ~ 4851897.57)	8911.98 (7240.65 ~ 10943.67)	-0.29 (-0.44 to -0.14)
	Both	2597784.07 (2153867.14 ~ 3086261.69)	9411.22 (7803 ~ 11180.87)	6545759.83 (5299098.17 ~ 8050116.53)	7722.01 (6251.33 ~ 9496.7)	-0.42 (-0.56 to -0.29)
	Male	783943.83 (648704.23 ~ 920215.27)	10572.66 (8748.75 ~ 12410.48)	2100894.15 (1700297.77 ~ 2551682.13)	8511.93 (6888.88 ~ 10338.33)	-0.58 (-0.69 to -0.46)
	Female	1365014.39 (1139754.7 ~ 1571896.07)	13471.6 (11248.47 ~ 15513.36)	3326193.14 (2739068.85 ~ 3951203.44)	11549.6 (9510.92 ~ 13719.84)	-0.25 (-0.36 to -0.13)
	Both	2148958.23 (1788089.43 ~ 2490201.23)	12246.62 (10190.08 ~ 14191.32)	5427087.3 (4437903.45 ~ 6498148.2)	10147.7 (8298.1 ~ 12150.39)	-0.41 (-0.52 to -0.3)
	Male	457609.74 (381473.48 ~ 548193.1)	13324.91 (11107.94 ~ 15962.57)	1553407.3 (1231840.31 ~ 1912224.2)	10550.5 (8366.47 ~ 12987.53)	-0.65 (-0.77 to -0.53)
80 to 84	Female	940311.06 (792062.97 ~ 1112500.17)	16429.81 (13839.51 ~ 19438.43)	2630708.81 (2122121.27 ~ 3195961.68)	13775.91 (11112.65 ~ 16735.9)	-0.31 (-0.42 to -0.21)
	Both	1397920.8 (1173617.53 ~ 1663821.2)	15265.41 (12816 ~ 18169.06)	4184116.11 (3349101.26 ~ 5097615.57)	12371.73 (9902.73 ~ 15072.79)	-0.48 (-0.59 to -0.37)

85 to 89	Male	210798.15 (180684.54 ~ 247750.11)	17558.62 (15050.28 ~ 20636.57)	960395.9 (793431.06 ~ 1177467.25)	12720.75 (10509.25 ~ 15595.93)	-0.94 (-1.02 to -0.85)
	Female	502892.02 (430364.01 ~ 580609.48)	20563.65 (17597.92 ~ 23741.58)	1873607.96 (1573895.84 ~ 2238579.23)	15997.51 (13438.46 ~ 19113.76)	-0.65 (-0.77 to -0.53)
	Both	713690.16 (608981.7 ~ 828443.74)	19574.19 (16702.38 ~ 22721.51)	2834003.86 (2369712.58 ~ 3409781.96)	14713.15 (12302.71 ~ 17702.38)	-0.78 (-0.88 to -0.68)
90 to 94	Male	55005.28 (46985.54 ~ 64802.47)	21164.05 (18078.34 ~ 24933.65)	376590.67 (310085.01 ~ 459347.45)	13991.45 (11520.57 ~ 17066.11)	-1.3 (-1.37 to -1.22)
	Female	160263.89 (138833.03 ~ 184810.41)	23566.96 (20415.54 ~ 27176.55)	884422.04 (744900.54 ~ 1056842.46)	17039.32 (14351.29 ~ 20361.18)	-1.05 (-1.16 to -0.93)
	Both	215269.17 (185979.83 ~ 248472.66)	22902.54 (19786.44 ~ 26435.07)	1261012.71 (1057301.58 ~ 1516100.37)	15998.53 (13414.04 ~ 19234.84)	-1.14 (-1.24 to -1.05)
Above 95	Male	11464.45 (9804.43 ~ 13660.8)	25947.13 (22190.06 ~ 30918.06)	114468.53 (94766.66 ~ 137508.15)	16687.74 (13815.51 ~ 20046.56)	-1.37 (-1.47 to -1.28)
	Female	44515.03 (38368.15 ~ 52091.54)	30663.92 (26429.68 ~ 35882.96)	354617.7 (302352.31 ~ 425066.72)	19760.69 (16848.26 ~ 23686.38)	-1.5 (-1.64 to -1.37)

All ages	Both	55979.48 (48222.95 ~ 65509.77)	29563.31 (25467.01 ~ 34596.35)	469086.23 (398990.55 ~ 562845.58)	18910.91 (16085.05 ~ 22690.76)	-1.49 (-1.61 to -1.37)
	Male	5691576.8 (5019578.95 ~ 6422951.89)	646.53 (570.19 ~ 729.61)	14011250.25 (12220598.67 ~ 16321165.27)	1237.89 (1079.68 ~ 1441.97)	2.03 (1.93 to 2.12)
	Female	8584569.89 (7703644.09 ~ 9563228.37)	1011.8 (907.98 ~ 1127.15)	21420242.09 (18963458.02 ~ 24552838.38)	1956.67 (1732.25 ~ 2242.82)	2.09 (1.99 to 2.18)
	Both	14276146.69 (12747940.82 ~ 16003954.55)	825.8 (737.4 ~ 925.74)	35431492.35 (31298146.56 ~ 40916037.17)	1591.28 (1405.65 ~ 1837.6)	2.07 (1.97 to 2.16)

Note: ASR: Age-Standardized Rate; EAPC: Estimated Annual Percentage Change; UI: Uncertainty Interval.

Table S5. DALYs of cataract in the Western Pacific regions by gender group in 1990 and 2023.

Age	Gender	1990		2023		EAPC (95% CI)
		Number (95% UI)	ASR (95% UI)	Number (95% UI)	ASR (95% UI)	
20 to 24	Male	446.76 (213.29 ~ 859.87)	0.49 (0.23 ~ 0.94)	179.31 (92.28 ~ 325.21)	0.27 (0.14 ~ 0.48)	-2.26 (-2.55 to -1.96)
	Female	427.44 (194.66 ~ 789.32)	0.48 (0.22 ~ 0.88)	189.91 (97.04 ~ 338.32)	0.31 (0.16 ~ 0.55)	-2.14 (-2.48 to -1.8)
	Both	874.2 (408.67 ~ 1614.13)	0.48 (0.23 ~ 0.89)	369.22 (195.72 ~ 673.64)	0.29 (0.15 ~ 0.52)	-2.21 (-2.5 to -1.92)
25 to 29	Male	2310.49 (1140.93 ~ 4235.32)	2.94 (1.45 ~ 5.39)	1149.67 (591.73 ~ 2001.39)	1.59 (0.82 ~ 2.77)	-2.34 (-2.6 to -2.09)
	Female	2167.08 (1088.17 ~ 4097.71)	2.83 (1.42 ~ 5.36)	1108.83 (562.21 ~ 1924.72)	1.69 (0.86 ~ 2.94)	-2.22 (-2.45 to -1.99)
	Both	4477.57 (2303.91 ~ 8397.68)	2.89 (1.49 ~ 5.42)	2258.5 (1145.08 ~ 3995.16)	1.64 (0.83 ~ 2.9)	-2.29 (-2.52 to -2.06)
30 to 34	Male	4877.05 (2772.17 ~ 8198.8)	7.37 (4.19 ~ 12.39)	3509.95 (2009.12 ~ 5547.23)	4.01 (2.3 ~ 6.34)	-2.27 (-2.46 to -2.08)

35 to 39	Female	4627.31 (2753.13 ~ 7750.05)	7.4 (4.4 ~ 12.39)	3264.5 (1898.33 ~ 5300.32)	4.06 (2.36 ~ 6.59)	-2.21 (-2.35 to -2.06)
	Both	9504.36 (5639.95 ~ 15847.6)	7.38 (4.38 ~ 12.31)	6774.45 (3966.72 ~ 10718.27)	4.04 (2.36 ~ 6.39)	-2.24 (-2.41 to -2.07)
	Male	10246.5 (5854.88 ~ 15093.16)	15.76 (9.01 ~ 23.22)	7830.3 (4818.89 ~ 11706.88)	8.67 (5.33 ~ 12.96)	-2.14 (-2.32 to -1.96)
	Female	9582.71 (5672.04 ~ 14403.51)	15.51 (9.18 ~ 23.31)	7622.77 (4778.15 ~ 11176.06)	8.9 (5.58 ~ 13.05)	-1.99 (-2.16 to -1.82)
	Both	19829.21 (11497.39 ~ 29324.63)	15.64 (9.07 ~ 23.13)	15453.07 (9587.2 ~ 22914.63)	8.78 (5.45 ~ 13.02)	-2.07 (-2.24 to -1.89)
	Male	17588.18 (10742.83 ~ 25790.72)	34.62 (21.14 ~ 50.76)	13954.65 (8833.04 ~ 19894.85)	18.57 (11.76 ~ 26.48)	-2.22 (-2.38 to -2.06)
40 to 44	Female	16621.05 (10047.3 ~ 24122.19)	35.01 (21.16 ~ 50.81)	14769.03 (9161.57 ~ 21269.39)	20.61 (12.78 ~ 29.68)	-1.95 (-2.12 to -1.78)
	Both	34209.23 (21044.03 ~ 49014.78)	34.81 (21.41 ~ 49.87)	28723.68 (17844.61 ~ 41423.05)	19.57 (12.16 ~ 28.22)	-2.09 (-2.25 to -1.92)

45 to 49	Male	29195.66 (18935.26 ~ 41984.06)	72.77 (47.19 ~ 104.64)	30987.76 (19935.59 ~ 45919.14)	40.32 (25.94 ~ 59.75)	-2 (-2.08 to -1.91)
	Female	30303.81 (19561.83 ~ 44643.89)	80.65 (52.06 ~ 118.81)	35762.31 (23352.9 ~ 52519.05)	47.84 (31.24 ~ 70.26)	-1.74 (-1.82 to -1.66)
	Both	59499.47 (37977.84 ~ 85685.74)	76.58 (48.88 ~ 110.28)	66750.07 (43456.38 ~ 99528.72)	44.03 (28.66 ~ 65.65)	-1.86 (-1.94 to -1.78)
50 to 54	Male	42390.01 (27923.85 ~ 61517.34)	115.89 (76.34 ~ 168.18)	57639.76 (39047.86 ~ 84747.31)	68.06 (46.11 ~ 100.07)	-1.65 (-1.74 to -1.56)
	Female	48283.62 (32360.64 ~ 69591.85)	140.98 (94.48 ~ 203.19)	71447.96 (48355.23 ~ 103589.42)	86.38 (58.46 ~ 125.25)	-1.47 (-1.54 to -1.4)
	Both	90673.63 (60284.48 ~ 129704.57)	128.02 (85.12 ~ 183.13)	129087.73 (87403.09 ~ 189292.1)	77.12 (52.21 ~ 113.08)	-1.55 (-1.62 to -1.47)
55 to 59	Male	54361.46 (37366.87 ~ 76490.81)	167.17 (114.91 ~ 235.22)	83965.13 (56022.7 ~ 119313.02)	105.06 (70.1 ~ 149.3)	-1.36 (-1.49 to -1.24)
	Female	67347.34 (46459.62 ~ 93672.79)	216.88 (149.62 ~ 301.66)	114075.28 (77587.92 ~ 160469.2)	141.24 (96.06 ~ 198.68)	-1.25 (-1.35 to -1.14)

60 to 64	Both	121708.8 (84158.01 ~ 170646.38)	191.45 (132.38 ~ 268.43)	198040.4 (133490.66 ~ 280109.01)	123.25 (83.08 ~ 174.32)	-1.29 (-1.4 to -1.17)
	Male	66504.66 (45280.45 ~ 92510.53)	253.77 (172.78 ~ 353)	97920.5 (67378.84 ~ 136234.24)	167.38 (115.18 ~ 232.88)	-1.17 (-1.31 to -1.03)
	Female	87767.46 (61582.49 ~ 122639.35)	338.84 (237.75 ~ 473.47)	139666.26 (97400.5 ~ 198763.7)	233.93 (163.14 ~ 332.92)	-1.05 (-1.19 to -0.92)
	Both	154272.12 (106946.69 ~ 215510.31)	296.06 (205.24 ~ 413.58)	237586.77 (165047.3 ~ 334945.38)	201 (139.63 ~ 283.36)	-1.09 (-1.23 to -0.96)
	Male	80432.53 (57282.22 ~ 110808.44)	421.16 (299.94 ~ 580.21)	137044.97 (95518.45 ~ 185349.96)	263.94 (183.96 ~ 356.97)	-1.22 (-1.37 to -1.08)
65 to 69	Female	118226.48 (85331.58 ~ 162220.28)	567.9 (409.89 ~ 779.22)	208438.82 (145594.3 ~ 280678.74)	385.38 (269.19 ~ 518.95)	-1 (-1.15 to -0.86)
	Both	198659.02 (142939.27 ~ 273065.86)	497.69 (358.1 ~ 684.1)	345483.79 (241112.76 ~ 463726.46)	325.9 (227.44 ~ 437.44)	-1.1 (-1.24 to -0.95)
70 to 74	Male	81471.26 (58970.72 ~ 114293.69)	651.78 (471.77 ~ 914.36)	151945.21 (108066.92 ~ 211827.11)	375.8 (267.28 ~ 523.9)	-1.42 (-1.59 to -1.25)

75 to 79	Female	136879.85 (96762.86 ~ 193042.78)	906.3 (640.68 ~ 1278.16)	247686.84 (178947.95 ~ 337492.06)	558.67 (403.63 ~ 761.23)	-1.1 (-1.27 to -0.93)
	Both	218351.11 (155958.2 ~ 306874.59)	791.04 (565 ~ 1111.74)	399632.05 (287791.61 ~ 546207.34)	471.44 (339.51 ~ 644.36)	-1.25 (-1.42 to -1.09)
	Male	64043.73 (45205.77 ~ 86510.33)	863.73 (609.67 ~ 1166.72)	122021.82 (86357.73 ~ 170047.67)	494.38 (349.88 ~ 688.96)	-1.48 (-1.64 to -1.31)
	Female	120018.97 (83208.87 ~ 162225.59)	1184.49 (821.21 ~ 1601.04)	210999.83 (149916.72 ~ 290307.92)	732.66 (520.56 ~ 1008.04)	-1.08 (-1.21 to -0.94)
	Both	184062.69 (128071.09 ~ 248464.61)	1048.95 (729.86 ~ 1415.97)	333021.65 (236840.73 ~ 461934.52)	622.69 (442.85 ~ 863.74)	-1.27 (-1.41 to -1.13)
	Male	37723.9 (26487.2 ~ 49723.03)	1098.46 (771.27 ~ 1447.86)	90656.26 (62178.12 ~ 122544.97)	615.72 (422.3 ~ 832.31)	-1.58 (-1.74 to -1.41)
80 to 84	Female	83839.96 (58995.22 ~ 111739.28)	1464.91 (1030.81 ~ 1952.39)	170016.33 (117446.8 ~ 230413)	890.3 (615.02 ~ 1206.58)	-1.13 (-1.26 to -1.01)
	Both	121563.85 (85865.49 ~ 161364.57)	1327.49 (937.66 ~ 1762.11)	260672.6 (179811.98 ~ 353912.36)	770.76 (531.67 ~ 1046.46)	-1.35 (-1.48 to -1.21)

85 to 89	Male	17439.07 (12561.99 ~ 23025.7)	1452.6 (1046.36 ~ 1917.95)	57363.3 (40667.8 ~ 75632.89)	759.8 (538.66 ~ 1001.78)	-1.83 (-1.94 to -1.73)
	Female	45273.56 (32321.05 ~ 59834.93)	1851.27 (1321.63 ~ 2446.7)	125152.21 (89353.58 ~ 161893.41)	1068.59 (762.93 ~ 1382.3)	-1.42 (-1.53 to -1.31)
	Both	62712.64 (44883.04 ~ 82983.26)	1720 (1231 ~ 2275.96)	182515.51 (130051.5 ~ 237682.51)	947.56 (675.18 ~ 1233.96)	-1.6 (-1.7 to -1.51)
90 to 94	Male	4642.74 (3376.67 ~ 6131.26)	1786.36 (1299.22 ~ 2359.09)	23991.84 (17423.19 ~ 31712.65)	891.37 (647.32 ~ 1178.22)	-2.12 (-2.19 to -2.04)
	Female	14679.65 (10575.04 ~ 19436.13)	2158.66 (1555.07 ~ 2858.1)	62448.33 (45983.58 ~ 81462.97)	1203.13 (885.92 ~ 1569.47)	-1.78 (-1.88 to -1.67)
	Both	19322.4 (13951.71 ~ 25567.39)	2055.71 (1484.33 ~ 2720.12)	86440.16 (63421.63 ~ 113736.74)	1096.67 (804.63 ~ 1442.98)	-1.91 (-2 to -1.82)
Above 95	Male	1008.53 (725.13 ~ 1331.64)	2282.57 (1641.16 ~ 3013.86)	7810.19 (5682.95 ~ 10162.75)	1138.61 (828.49 ~ 1481.57)	-2.16 (-2.29 to -2.03)
	Female	4205.36 (2991.26 ~ 5606.26)	2896.84 (2060.51 ~ 3861.84)	26470.4 (19112.69 ~ 34863.82)	1475.03 (1065.03 ~ 1942.75)	-2.2 (-2.35 to -2.04)
	Both	5213.89 (3710.99 ~ 6937.9)	2753.5 (1959.81 ~ 3663.97)	34280.59 (24799.43 ~ 44980.99)	1382 (999.77 ~ 1813.38)	-2.21 (-2.36 to -2.06)

						-2.06)
	Male	514682.53 (373690.08 ~ 709954.63)	58.46 (42.45 ~ 80.65)	887970.62 (653772.54 ~ 1215402.21)	78.45 (57.76 ~ 107.38)	1.04 (0.92 to 1.15)
All age	Female	790251.65 (578147.69 ~ 1069523.47)	93.14 (68.14 ~ 126.06)	1439119.61 (1056036.89 ~ 1955816.94)	131.46 (96.47 ~ 178.66)	1.25 (1.14 to 1.36)
	Both	1304934.18 (953013.24 ~ 1777980.72)	75.48 (55.13 ~ 102.85)	2327090.24 (1709857.14 ~ 3173887.4)	104.51 (76.79 ~ 142.54)	1.17 (1.06 to 1.28)

Note: ASR: Age-Standardized Rate; EAPC: Estimated Annual Percentage Change; UI: Uncertainty Interval.

Table S6. Percentage of age-standardized prevalence of cataract attributable to aging, population, and epidemiological change in the Western Pacific region, 1990–2023.

Location	Overall difference	Aging	Population	Epidemiological change
Micronesia (Federated States of)	208.65 (36.58%)	-75.38 (-13.21%)	434.4 (76.15%)	-150.37 (-26.36%)
New Zealand	4376.23 (109.79%)	1016.86 (25.51%)	4322.79 (108.45%)	-963.41 (-24.17%)
Mongolia	3730.42 (72.75%)	-1613.27 (-31.46%)	7118.03 (138.81%)	-1774.34 (-34.6%)
Niue	-5.34 (-16.16%)	-1.66 (-5.03%)	2.11 (6.37%)	-5.79 (-17.51%)
Northern Mariana Islands	287.42 (200.91%)	69.86 (48.83%)	252.06 (176.19%)	-34.5 (-24.11%)
Nauru	16.6 (55.87%)	4.88 (16.42%)	17.6 (59.23%)	-5.88 (-19.78%)
Palau	114.67 (106.4%)	-2.44 (-2.26%)	144.31 (133.9%)	-27.2 (-25.24%)
China	13889268.76 (153.71%)	3749610.28 (41.5%)	14365261.3 (158.98%)	-4225602.81 (-46.76%)
Cambodia	257366.16 (172.29%)	41938.9 (28.08%)	289703.42 (193.94%)	-74276.16 (-49.72%)
Brunei Darussalam	339.07 (205.35%)	-9.54 (-5.77%)	461.54 (279.52%)	-112.93 (-68.39%)
Cook Islands	67.91 (50.72%)	40.32 (30.11%)	63.46 (47.39%)	-35.87 (-26.79%)
Australia	28540.04 (166.47%)	7820.32 (45.62%)	23272.38 (135.75%)	-2552.67 (-14.89%)

American Samoa	204.94 (83.73%)	16.73 (6.83%)	255 (104.18%)	-66.79 (-27.29%)
Viet Nam	1158903.56 (188.46%)	-54213.41 (-8.82%)	1181324.29 (192.1%)	31792.68 (5.17%)
Tonga	93.49 (17.38%)	49.21 (9.15%)	230.89 (42.93%)	-186.61 (-34.7%)
Vanuatu	936.18 (156.77%)	-52.27 (-8.75%)	1142.64 (191.34%)	-154.18 (-25.82%)
Tuvalu	8.68 (9.81%)	4.46 (5.04%)	28.19 (31.89%)	-23.97 (-27.12%)
Philippines	814423.88 (172.65%)	47201.87 (10.01%)	868081.71 (184.03%)	-100859.7 (-21.38%)
Samoa	691.99 (57.44%)	-9.77 (-0.81%)	1007.96 (83.67%)	-306.2 (-25.42%)
Papua New Guinea	58405.02 (179.37%)	-493.09 (-1.51%)	68010.17 (208.87%)	-9112.06 (-27.98%)
Tokelau	0.23 (1.08%)	-0.31 (-1.47%)	5.17 (24.66%)	-4.63 (-22.11%)
Solomon Islands	2889.19 (145.09%)	-456.29 (-22.92%)	3992 (200.48%)	-646.52 (-32.47%)
Singapore	11076.68 (287.52%)	2644.89 (68.65%)	10748.59 (279%)	-2316.8 (-60.14%)
Republic of Korea	134261.12 (240.67%)	49383.67 (88.52%)	114480.84 (205.21%)	-29603.38 (-53.07%)
Lao People's Democratic Republic	17081.13 (122.82%)	-1275.39 (-9.17%)	19593.14 (140.88%)	-1236.62 (-8.89%)
Kiribati	365.36 (79.18%)	-14.23 (-3.08%)	498.74 (108.09%)	-119.15 (-25.82%)

Fiji	5601.53 (108.43%)	1184.33 (22.93%)	5694.73 (110.23%)	-1277.53 (-24.73%)
Japan	320637.56 (160.63%)	210400.01 (105.4%)	143851.86 (72.06%)	-33614.3 (-16.84%)
Malaysia	520176.62 (215.69%)	76719.52 (31.81%)	560146.28 (232.26%)	-116689.18 (-48.38%)
Guam	1506.37 (194.48%)	453.15 (58.51%)	1258.44 (162.48%)	-205.22 (-26.5%)
Marshall Islands	26.37 (13.12%)	-48.82 (-24.3%)	139.27 (69.31%)	-64.08 (-31.89%)

Table S7. Percentage of age-standardized DALYs of cataract attributable to aging, population, and epidemiological change in the Western Pacific region, 1990–2023.

Location	Overall difference	Aging	Population	Epidemiological change
Micronesia (Federated States of)	8.91 (16.23%)	-5.59 (-10.18%)	39.12 (71.26%)	-24.62 (-44.85%)
New Zealand	273.27 (75.74%)	71.65 (19.86%)	360.45 (99.9%)	-158.84 (-44.02%)
Mongolia	176.84 (36.42%)	-129.88 (-26.75%)	614.01 (126.45%)	-307.29 (-63.28%)
Niue	-0.87 (-30.3%)	-0.14 (-4.89%)	0.17 (5.89%)	-0.9 (-31.3%)
Northern Mariana Islands	18.21 (155.33%)	4.65 (39.64%)	19.07 (162.67%)	-5.51 (-46.99%)
Nauru	0.95 (33.23%)	0.36 (12.78%)	1.57 (55.07%)	-0.99 (-34.62%)
Palau	6.75 (75.35%)	-0.16 (-1.77%)	11.17 (124.71%)	-4.26 (-47.58%)
China	614598.87 (72.21%)	277244.35 (32.57%)	1152497.32 (135.41%)	-815142.79 (-95.77%)
Cambodia	15959.54 (131.41%)	3274.79 (26.96%)	21973.47 (180.93%)	-9288.72 (-76.48%)
Brunei Darussalam	24.61 (143.8%)	-0.54 (-3.18%)	43.81 (255.99%)	-18.66 (-109.02%)
Cook Islands	1.9 (16.79%)	2.87 (25.4%)	4.78 (42.31%)	-5.76 (-50.91%)
Australia	1899.97 (126.38%)	544.8 (36.24%)	1880.31 (125.07%)	-525.14 (-34.93%)

American Samoa	10.71 (51.23%)	1.24 (5.92%)	20.02 (95.73%)	-10.54 (-50.43%)
Viet Nam	54264.47 (107.17%)	-3020.85 (-5.97%)	83503.79 (164.92%)	-26218.48 (-51.78%)
Tonga	-1.99 (-2.96%)	5.23 (7.76%)	26.77 (39.69%)	-33.99 (-50.41%)
Vanuatu	70.55 (128.57%)	-3.84 (-7%)	99.71 (181.71%)	-25.32 (-46.15%)
Tuvalu	-0.94 (-10.59%)	0.42 (4.74%)	2.6 (29.27%)	-3.96 (-44.6%)
Philippines	48922.01 (136.59%)	3186.06 (8.9%)	61745.85 (172.39%)	-16009.9 (-44.7%)
Samoa	37.68 (34.02%)	-0.4 (-0.36%)	86.45 (78.06%)	-48.37 (-43.68%)
Papua New Guinea	4411.43 (147.94%)	-7.79 (-0.26%)	5903.63 (197.99%)	-1484.41 (-49.78%)
Tokelau	-0.34 (-18.45%)	-0.01 (-0.71%)	0.42 (22.55%)	-0.75 (-40.29%)
Solomon Islands	240.94 (117.12%)	-39.91 (-19.4%)	391.63 (190.38%)	-110.78 (-53.85%)
Singapore	810.68 (204.61%)	213.03 (53.77%)	992.05 (250.38%)	-394.39 (-99.54%)
Republic of Korea	8641.75 (161.58%)	3695.09 (69.09%)	9692.76 (181.23%)	-4746.1 (-88.74%)
Lao People's Democratic Republic	799.98 (79.74%)	-75.9 (-7.57%)	1282.32 (127.82%)	-406.44 (-40.51%)
Kiribati	26.3 (57.56%)	-0.92 (-2.01%)	46.69 (102.19%)	-19.47 (-42.62%)

Fiji	304.81 (71.23%)	80.51 (18.81%)	431.26 (100.78%)	-206.96 (-48.36%)
Japan	18821.83 (113.23%)	14092.76 (84.78%)	10723.8 (64.51%)	-5994.74 (-36.06%)
Malaysia	27263.63 (160.38%)	4928.78 (28.99%)	36296.41 (213.52%)	-13961.56 (-82.13%)
Guam	91.9 (146.47%)	30.86 (49.19%)	93.53 (149.07%)	-32.5 (-51.8%)
Marshall Islands	-1.69 (-8.64%)	-3.88 (-19.83%)	12.53 (63.98%)	-10.34 (-52.8%)
