

Global, regional, and national burden of aortic aneurysm, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017

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Table 1. Aortic aneurism age-standardized mortality estimates and ARC% expressed by country, for both sexes in 1990, and 2017

Location	1990			2017			ARC %
	Rate of death per 100,000 in 1990	95% UI		Rate of death per 100,000 in 2017	95% UI		
Mozambique	3.942	2.325	5.581	3.192	2.262	4.379	-0.78%
Mauritius	1.591	1.469	1.721	1.087	0.991	1.189	-1.41%
Malawi	2.727	1.523	3.916	2.031	1.326	2.818	-1.09%
Rwanda	3.957	2.552	5.815	1.620	1.099	2.431	-3.31%
Somalia	4.565	2.706	7.118	2.409	1.595	3.372	-2.37%
Zambia	3.276	2.149	4.414	2.134	1.520	2.731	-1.59%
Kenya	2.672	1.889	3.497	1.992	1.544	2.613	-1.09%
Madagascar	5.626	3.598	7.864	3.643	2.457	4.972	-1.61%
South Sudan	4.116	2.491	6.402	2.152	1.394	3.134	-2.40%
Tanzania	3.310	2.168	4.441	2.495	1.752	3.551	-1.05%
Uganda	2.572	1.631	3.801	1.720	1.140	2.545	-1.49%
Zimbabwe	2.645	2.125	3.084	2.919	2.183	3.636	0.37%
Ethiopia	2.656	1.701	4.244	1.344	0.911	1.907	-2.52%
Eritrea	5.172	3.448	8.046	2.470	1.624	3.345	-2.74%
Djibouti	4.054	2.575	5.771	2.429	1.585	3.389	-1.90%
Comoros	4.743	3.139	6.766	2.292	1.619	3.015	-2.69%
Burundi	4.805	3.379	6.693	1.987	1.373	2.775	-3.27%
Gabon	5.288	3.930	6.722	3.672	2.764	4.445	-1.35%
Equatorial Guinea	5.148	3.226	8.182	3.207	2.267	4.367	-1.75%
Chad	2.183	1.583	2.814	1.707	1.267	2.261	-0.91%
Sao Tome and Principe	1.923	1.308	2.761	1.779	1.402	2.274	-0.29%
Congo	5.567	4.149	7.826	3.808	2.897	4.703	-1.41%
Democratic Republic of the Congo	3.843	2.532	5.377	2.621	1.926	3.414	-1.42%
Cameroon	2.709	2.087	3.461	1.824	1.410	2.353	-1.47%
Central African Republic	5.050	3.059	7.757	3.565	2.360	5.237	-1.29%
Angola	4.575	3.082	6.915	3.145	2.473	3.983	-1.39%
Morocco	0.928	0.644	1.390	1.134	0.836	1.578	0.74%
Libya	0.844	0.626	1.228	1.068	0.801	1.473	0.87%
Tunisia	0.983	0.741	1.475	1.042	0.744	1.465	0.22%
Algeria	0.963	0.683	1.350	0.935	0.677	1.274	-0.11%
Namibia	3.788	2.904	4.624	2.447	1.982	2.941	-1.62%
Swaziland	3.320	2.662	4.020	2.629	2.058	3.247	-0.86%
Lesotho	2.637	2.053	3.368	2.505	1.890	3.150	-0.19%
South Africa	3.105	2.407	3.752	2.354	2.138	2.809	-1.03%
Botswana	3.337	2.666	4.044	2.350	1.871	2.967	-1.30%

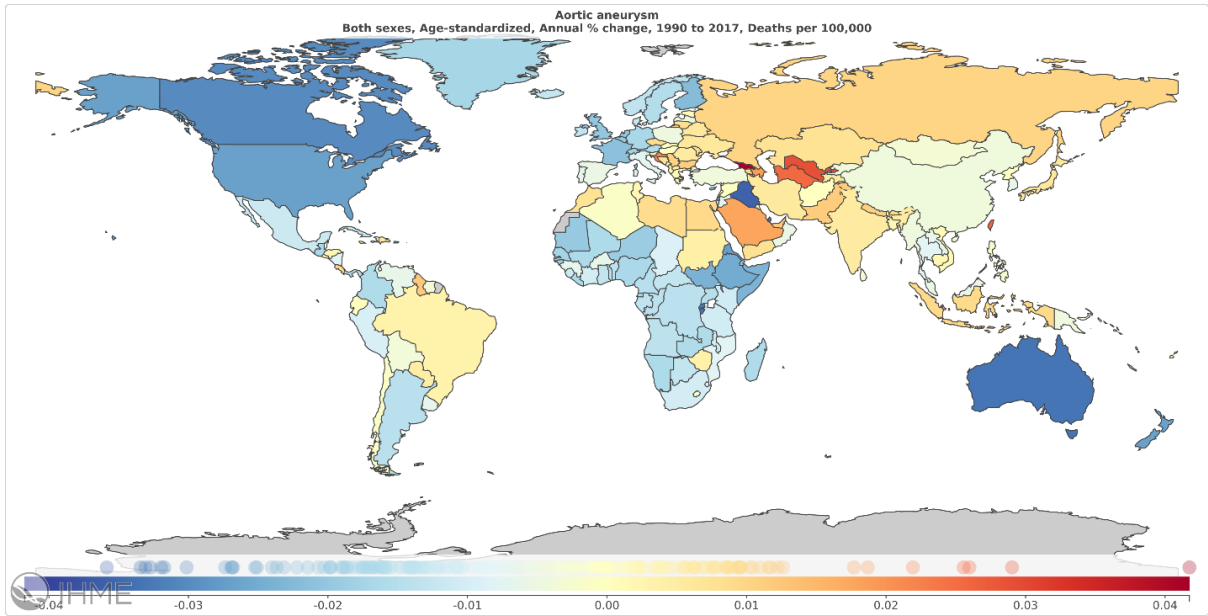
Togo	2.750	2.084	3.549	1.892	1.509	2.367	-1.39%
Sierra Leone	2.583	1.875	3.327	1.902	1.520	2.384	-1.13%
Senegal	2.108	1.577	2.713	1.312	1.057	1.636	-1.76%
Nigeria	2.395	1.706	3.238	1.531	1.062	2.332	-1.66%
Niger	2.223	1.626	2.965	1.328	0.932	1.826	-1.91%
Mauritania	3.184	2.555	4.285	1.866	1.462	2.407	-1.98%
Mali	2.725	1.769	3.874	1.760	1.248	2.375	-1.62%
Liberia	2.654	1.780	3.443	1.704	1.218	2.228	-1.64%
Guinea-Bissau	3.887	2.675	5.523	2.337	1.630	3.230	-1.88%
The Gambia	2.820	2.027	3.688	2.022	1.581	2.517	-1.23%
Guinea	2.419	1.849	3.292	2.026	1.483	2.740	-0.66%
Ghana	2.493	2.030	2.938	1.746	1.449	2.110	-1.32%
Cape Verde	1.022	0.813	1.248	1.290	1.084	1.497	0.86%
Cote d'Ivoire	2.589	1.891	3.242	1.955	1.558	2.423	-1.04%
Burkina Faso	1.926	1.368	2.564	1.619	1.211	2.145	-0.64%
Benin	2.445	1.851	3.205	1.686	1.239	2.276	-1.38%
Dominica	4.648	4.067	5.229	4.369	3.940	4.813	-0.23%
Dominican Republic	1.702	1.438	1.966	2.017	1.687	2.485	0.63%
Antigua and Barbuda	2.701	2.428	2.991	2.018	1.827	2.239	-1.08%
Cuba	5.259	4.747	5.925	3.821	3.390	4.319	-1.18%
Grenada	5.615	4.852	6.441	4.624	4.214	5.039	-0.72%
Jamaica	1.989	1.789	2.327	2.402	1.993	2.825	0.70%
Trinidad and Tobago	5.348	4.875	5.941	4.184	3.518	4.991	-0.91%
Saint Lucia	7.046	6.079	8.377	5.272	4.771	5.775	-1.07%
Saint Vincent and the Grenadines	3.238	2.972	3.521	2.852	2.589	3.129	-0.47%
Haiti	3.945	2.680	5.453	3.692	2.969	4.752	-0.25%
El Salvador	1.232	1.061	1.410	1.299	1.072	1.537	0.20%
Nicaragua	1.072	0.898	1.231	0.862	0.752	1.005	-0.81%
Mexico	1.307	1.271	1.350	0.957	0.911	0.998	-1.16%
Honduras	1.167	0.874	1.531	1.246	0.952	1.657	0.24%
Guatemala	1.765	1.496	2.015	1.120	0.998	1.254	-1.68%
Costa Rica	2.024	1.762	2.339	2.617	2.358	2.921	0.95%
Belize	1.725	1.530	2.044	1.683	1.487	1.840	-0.09%
Colombia	3.855	3.678	4.059	2.511	2.191	2.849	-1.59%
Guyana	2.302	2.086	2.522	3.202	2.820	3.596	1.22%
Ecuador	1.964	1.714	2.209	1.971	1.780	2.206	0.01%
Paraguay	2.743	2.350	3.116	3.116	2.570	3.784	0.47%
Suriname	2.718	2.341	3.082	2.476	2.168	2.799	-0.35%
Venezuela	2.724	2.457	3.036	2.297	1.971	2.668	-0.63%
Peru	1.389	1.189	1.683	1.070	0.886	1.272	-0.97%

Brazil	4.091	4.001	4.189	4.494	4.285	4.667	0.35%
Bolivia	2.487	1.495	3.462	2.248	1.709	2.913	-0.37%
Argentina	6.835	6.205	7.667	4.645	4.178	5.193	-1.43%
Turkmenistan	1.183	1.011	1.399	2.359	1.910	2.941	2.56%
Uzbekistan	0.592	0.435	0.743	1.296	1.152	1.457	2.90%
Tajikistan	1.629	1.327	2.010	1.894	1.534	2.143	0.56%
Kyrgyzstan	0.863	0.772	1.017	0.777	0.702	0.869	-0.39%
Kazakhstan	1.569	1.321	1.893	1.928	1.774	2.091	0.76%
Mongolia	1.020	0.883	1.284	0.939	0.815	1.091	-0.31%
North Korea	1.173	0.942	1.454	1.167	0.945	1.476	-0.02%
Myanmar	1.460	1.012	2.080	1.294	1.043	1.603	-0.45%
Cambodia	1.360	0.869	2.154	1.453	1.193	1.845	0.24%
Vietnam	1.448	1.126	1.944	1.505	1.256	1.845	0.14%
Laos	2.313	1.652	3.572	1.944	1.549	2.575	-0.64%
Malaysia	4.612	3.651	5.330	3.967	3.244	4.549	-0.56%
Thailand	2.178	1.735	2.632	1.771	1.475	1.976	-0.77%
Philippines	2.285	2.006	2.626	2.155	1.890	2.444	-0.22%
Indonesia	1.372	1.095	1.730	1.764	1.437	2.270	0.93%
Timor-Leste	1.253	0.881	1.752	1.507	1.127	2.349	0.69%
Maldives	3.624	2.486	4.910	2.194	1.883	2.518	-1.86%
Nepal	1.134	0.819	1.706	1.525	1.193	1.952	1.10%
Iran	0.830	0.702	1.009	0.965	0.803	1.049	0.56%
Sri Lanka	1.931	1.673	2.267	1.755	1.361	2.199	-0.35%
Bhutan	1.953	1.424	2.688	2.526	1.917	3.355	0.95%
Bangladesh	1.511	1.085	2.178	1.595	1.252	2.060	0.20%
Afghanistan	1.232	0.629	2.604	1.222	0.787	2.061	-0.03%
Palestine	1.795	1.388	2.395	1.600	1.386	1.833	-0.43%
Lebanon	1.150	0.894	1.797	1.117	0.879	1.506	-0.11%
Turkey	2.799	2.061	3.982	2.506	2.186	3.153	-0.41%
Yemen	1.071	0.617	2.067	1.324	0.910	1.923	0.79%
Iraq	3.849	3.147	4.655	1.462	1.283	1.628	-3.59%
Jordan	2.039	1.439	2.735	1.702	1.419	2.190	-0.67%
Syria	1.730	1.337	2.433	1.697	1.409	2.058	-0.07%
Georgia	0.961	0.868	1.078	2.967	2.706	3.276	4.17%
Azerbaijan	1.221	0.930	1.713	2.022	1.653	2.356	1.87%
Armenia	6.376	5.511	7.385	8.263	7.706	8.867	0.96%
Moldova	1.007	0.927	1.111	1.264	1.169	1.361	0.84%
Romania	1.794	1.618	1.991	2.084	1.945	2.222	0.56%
Ukraine	2.157	1.966	2.444	2.556	2.382	2.734	0.63%
Belarus	2.102	1.721	2.423	2.482	2.237	2.755	0.62%
Russian Federation	2.648	2.506	2.770	3.492	3.377	3.611	1.02%
Bulgaria	1.573	1.460	1.669	2.149	1.979	2.324	1.16%
Macedonia	1.485	1.285	2.028	1.668	1.313	1.975	0.43%

Montenegro	6.665	5.937	7.930	7.312	6.432	8.398	0.34%
Serbia	3.035	2.619	3.586	4.026	3.189	4.560	1.05%
Bosnia and Herzegovina	2.543	2.150	3.052	3.128	2.457	3.528	0.77%
Albania	0.999	0.887	1.202	1.070	0.855	1.315	0.26%
Papua New Guinea	4.712	3.238	6.592	4.191	3.055	5.556	-0.43%
Vanuatu	4.406	3.189	5.779	4.098	2.885	5.950	-0.27%
Solomon Islands	2.915	2.146	3.959	2.502	1.907	3.199	-0.57%
Fiji	5.983	5.126	6.916	5.755	4.979	6.564	-0.14%
Marshall Islands	5.912	3.895	7.914	5.265	3.786	6.761	-0.43%
Federated States of Micronesia	5.150	4.039	6.408	4.125	3.410	5.017	-0.82%
Kiribati	1.560	1.342	1.747	1.608	1.326	1.907	0.11%
Samoa	3.531	2.747	4.403	3.138	2.411	3.819	-0.44%
Tonga	2.093	1.794	2.475	1.981	1.625	2.372	-0.20%
American Samoa	4.016	3.406	4.612	2.424	2.116	2.852	-1.87%
Egypt	1.120	0.737	2.026	1.444	0.876	2.320	0.94%
Sudan	0.989	0.630	1.632	1.103	0.724	1.706	0.41%
India	1.582	1.229	2.168	1.824	1.507	2.170	0.53%
Pakistan	2.360	1.848	3.093	3.240	2.482	4.160	1.17%
China	0.984	0.781	1.175	0.877	0.791	0.971	-0.43%

Table presents annualized rate of change (ARC%) among all the GBD low- and middle- income countries, based on the 2018 world bank evaluation.

Estimates for high income countries are not presented in this table and can be found in the GBD visualization tool <http://vizhub.healthdata.org/gbd-compare>



Supplementary Figure 1: Map of aortic aneurysm age-standardized ARC% mortality estimates, for both sexes, between 1990 and 2017

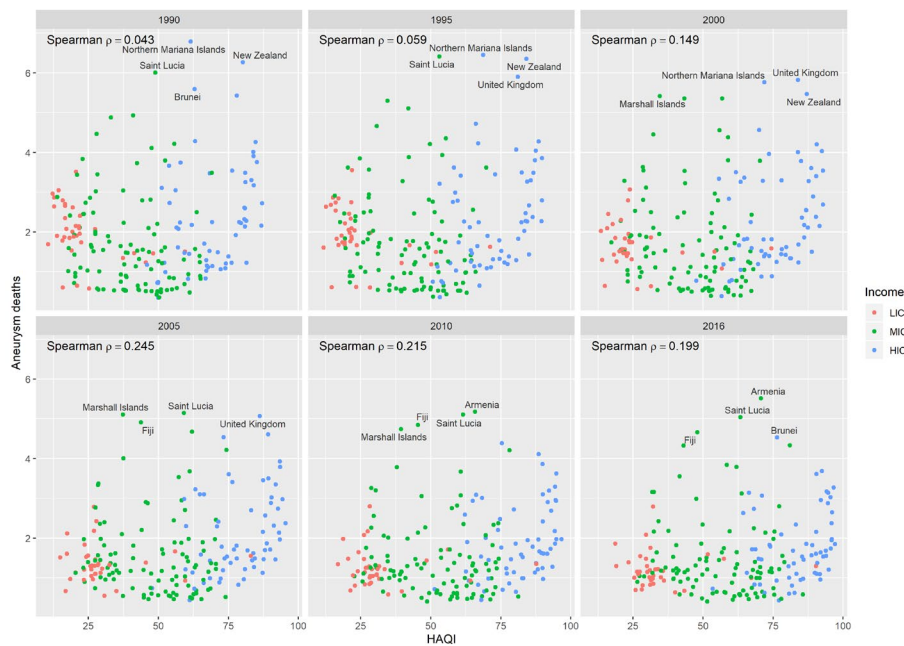
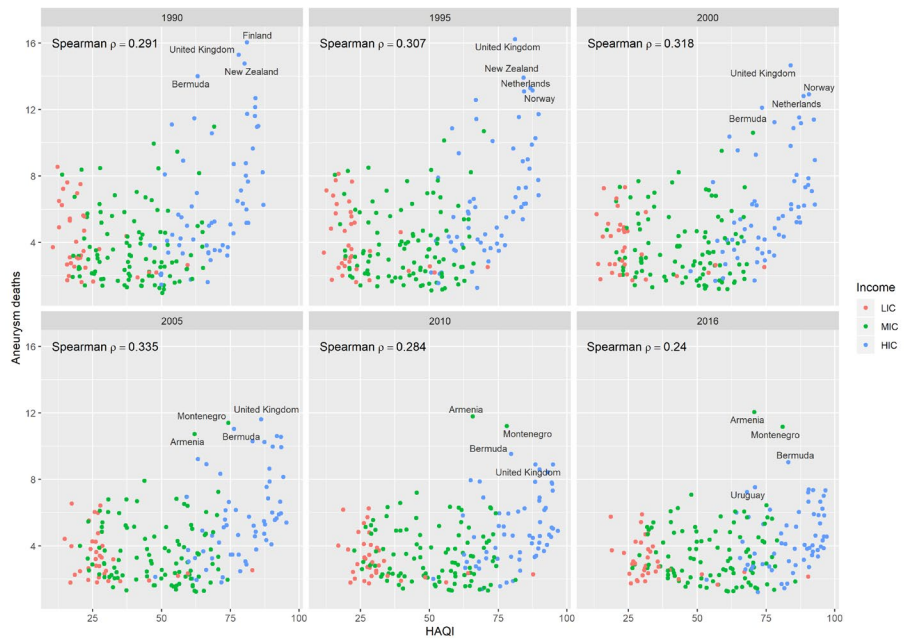


A)



LIC:Low income countries; MIC: Middle-income countries; HIC: High-income countries. Statistical significances are not shown

Supplementary Figure 2. Correlation between age-standardized aortic aneurysm mortality and sociodemographic index (SDI) among 195 countries, analyzed by country's income, for males(A) and females (B), between 1990 to 2017.



Aortic aneurysm deaths are expressed as age-standardized deaths per 100,000

LIC: Low income countries; MIC: Middle-income countries; HIC: High-income countries. Statistical significances are not shown

Supplementary Figure 3. Correlation between age-standardized aortic aneurysm mortality and healthcare access and quality (HAQ) index among 195 countries, analyzed by country's income, for males (A) and females (B), between 1990 to 2016.