

GBD PROFILE: CUBA

GLOBAL BURDEN OF DISEASES, INJURIES, AND RISK FACTORS STUDY 2010

The Global Burden of Disease Study 2010 (GBD 2010) is a collaborative project of nearly 500 researchers in 50 countries led by the Institute for Health Metrics and Evaluation (IHME) at the University of Washington. It is the largest systematic scientific effort in history to quantify levels and trends of health loss due to diseases, injuries, and risk factors. GBD serves as a global public good to inform evidence-based policymaking and health systems design.

PROFILE OVERVIEW

- In terms of the number of years of life lost (YLLs) due to premature death in Cuba, ischemic heart disease, cerebrovascular disease, and trachea, bronchus, and lung cancers were the highest ranking causes in 2010.
- Of the 25 most important causes of burden, as measured by disability-adjusted life years (DALYs), self-harm showed the largest decrease, falling by 42% from 1990 to 2010.
- The leading risk factor in Cuba is dietary risks.

Percent decline in age-specific mortality rate by sex from 1990-2010 in Cuba



ALL-CAUSE MORTALITY RATE

- This chart shows the change in mortality rate at every age range. The points above 0 on the chart indicate positive declines in the all-cause mortality rate, while points below 0 indicate an increase in mortality rate between 1990 and 2010.
- The greatest reductions in all-cause mortality rate were experienced by females aged 15-19 years (65%). Females aged 80+ years saw the largest increase in mortality rate (16%).

CAUSES OF PREMATURE DEATH

Years of life lost (YLLs) quantify premature mortality by weighting younger deaths more than older deaths.

Ranks for top 25 causes of YLLs 1990-2010, Cuba

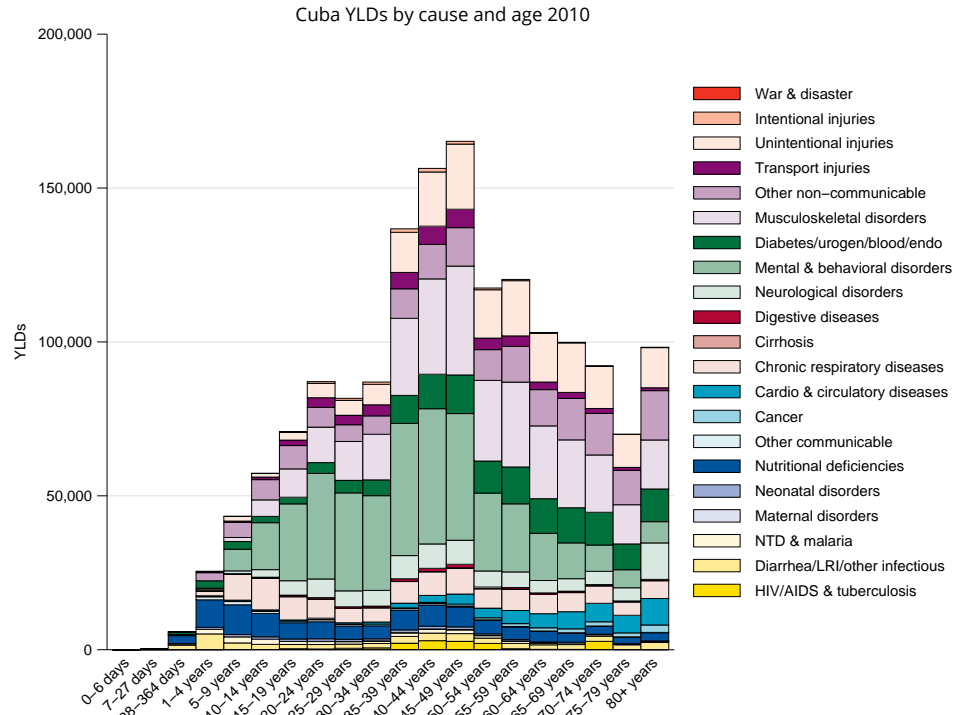
# YLLs in thousands (% of total)	Rank and disorder 1990	Rank and disorder 2010	# YLLs in thousands (% of total)	% change
284 (17.1%)	1 Ischemic heart disease	1 Ischemic heart disease	289 (18.4%)	0
135 (8.1%)	2 Stroke	2 Stroke	148 (9.5%)	10
112 (6.7%)	3 Road injury	3 Lung cancer	92 (5.9%)	42
86 (5.2%)	4 Self-harm	4 Lower respiratory infections	73 (4.6%)	-4
76 (4.5%)	5 Lower respiratory infections	5 Self-harm	54 (3.4%)	-44
65 (3.9%)	6 Lung cancer	6 COPD	45 (2.9%)	48
64 (3.8%)	7 Congenital anomalies	7 Road injury	46 (2.9%)	-61
49 (2.9%)	8 Interpersonal violence	8 Colorectal cancer	39 (2.5%)	47
45 (2.7%)	9 Diabetes	9 Diabetes	34 (2.2%)	-28
30 (1.8%)	10 COPD	10 Cirrhosis	32 (2.0%)	37
32 (1.9%)	11 Preterm birth complications	11 Chronic kidney disease	32 (2.0%)	130
26 (1.6%)	12 Colorectal cancer	12 Alzheimers disease	31 (2.0%)	169
24 (1.5%)	13 Falls	13 Breast cancer	31 (1.9%)	30
24 (1.4%)	14 Cirrhosis	14 Interpersonal violence	30 (1.9%)	-37
24 (1.4%)	15 Drowning	15 Prostate cancer	29 (1.9%)	72
24 (1.4%)	16 Breast cancer	16 Falls	25 (1.6%)	3
22 (1.3%)	17 Neonatal encephalopathy	17 Congenital anomalies	22 (1.4%)	-66
22 (1.3%)	18 Meningitis	18 Hypertensive heart disease	22 (1.4%)	57
20 (1.2%)	19 Leukemia	19 Other cardio & circulatory	19 (1.2%)	15
17 (1.0%)	20 Cervical cancer	20 Cervical cancer	17 (1.1%)	3
17 (1.0%)	21 Prostate cancer	21 Leukemia	17 (1.1%)	-16
16 (1.0%)	22 Non-Hodgkin lymphoma	22 Pancreatic cancer	16 (1.0%)	49
16 (1.0%)	23 Other cardio & circulatory	23 Stomach cancer	16 (1.0%)	-2
16 (1.0%)	24 Stomach cancer	24 Cardiomyopathy	15 (1.0%)	32
16 (1.0%)	25 Diarrheal diseases	25 Liver cancer	15 (1.0%)	77
	27 Chronic kidney disease	26 Non-Hodgkin lymphoma		
	28 Hypertensive heart disease	27 Drowning		
	30 Cardiomyopathy	32 Preterm birth complications		
	31 Alzheimers disease	43 Neonatal encephalopathy		
	32 Pancreatic cancer	47 Meningitis		
	39 Liver cancer	48 Diarrheal diseases		

This chart shows the change in the top 25 causes of YLLs due to premature mortality from 1990 to 2010. Solid lines indicate a cause has moved up in rank or stayed the same. Broken lines indicate a cause has moved down in rank. The causes are color coded by blue for non-communicable diseases, green for injuries, and red for communicable, maternal, neonatal, and nutritional causes of death.

YEARS LIVED WITH DISABILITY (YLDs)

Years lived with disability (YLDs) are estimated by weighting the prevalence of different conditions based on severity. The top five leading causes of YLDs in Cuba are major depressive disorder, low back pain, iron-deficiency anemia, adverse effects of medical treatment, and diabetes mellitus.

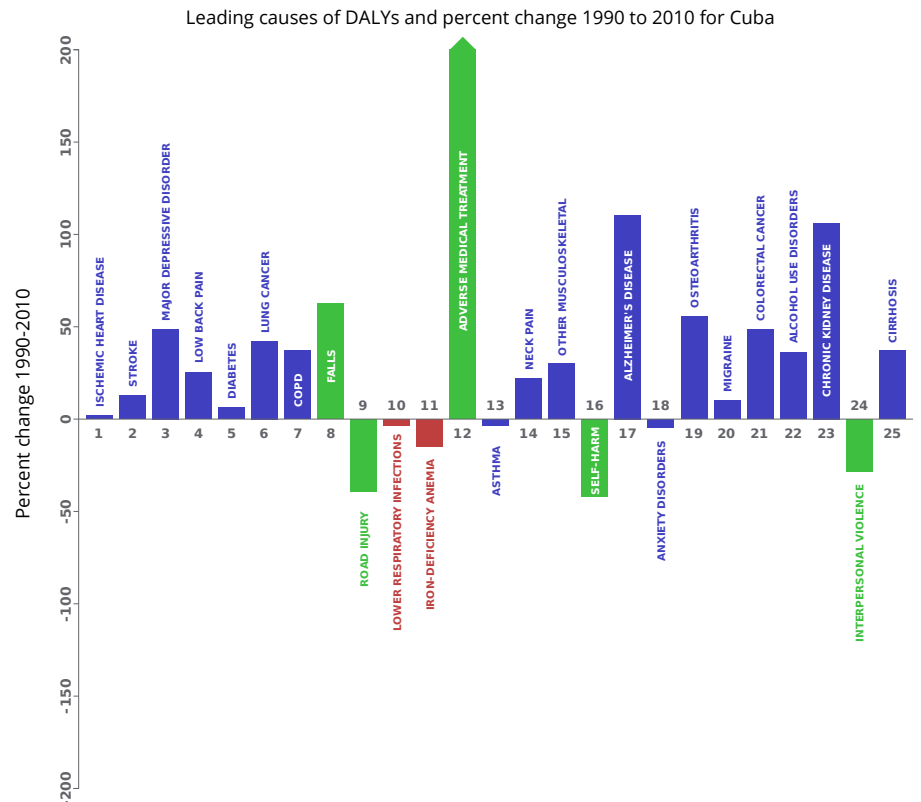
The size of the colored portion in each bar represents the number of YLDs attributable to each cause. The height of each bar shows which age groups had the most YLDs in 2010. The causes are aggregated. For example, musculoskeletal disorders include low back pain and neck pain.



DISABILITY-ADJUSTED LIFE YEARS (DALYs)

Disability-adjusted life years (DALYs) quantify both premature mortality (YLLs) and disability (YLDs) within a population. In Cuba, the top three causes of DALYs in 2010 were ischemic heart disease, cerebrovascular disease, and major depressive disorder. The causes that were in the 10 leading causes of DALYs in 2010 and not 1990 were trachea, bronchus, and lung cancers, chronic obstructive pulmonary disease, and falls.

The top 25 causes of DALYs are ranked from left to right in order of the number of DALYs they contributed in 2010. Bars going up show the percent by which DALYs have increased since 1990. Bars going down show the percent by which DALYs have decreased. Globally, non-communicable diseases and injuries are generally on the rise, while communicable, maternal, neonatal, and nutritional causes of DALYs are generally on the decline.

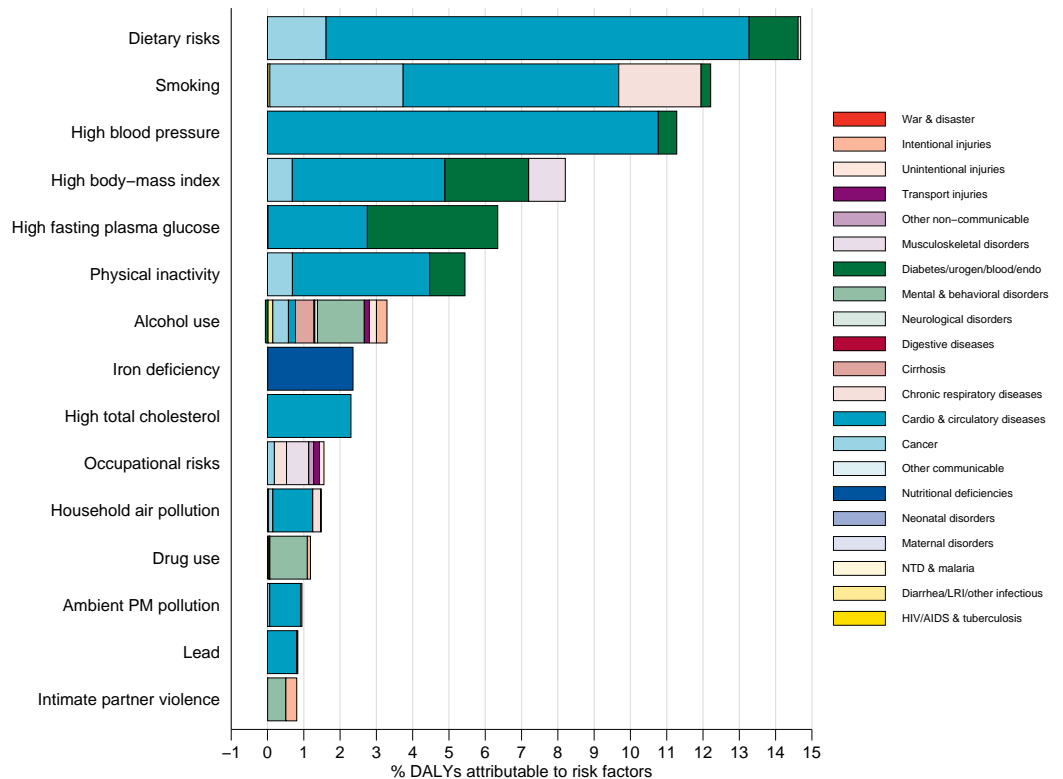


RISK FACTORS

Overall, the three risk factors that account for the most disease burden in Cuba are dietary risks, tobacco smoking, and high blood pressure. The leading risk factors for children under 5 and adults aged 15-49 years were suboptimal breastfeeding and dietary risks, respectively, in 2010.

The graph shows the top 15 risk factors for Cuba. The colored portion of each bar represents the specific diseases attributable to that risk factor while bar size represents the percentage of DALYs linked to specific risk factors.

Burden of disease attributable to 15 leading risk factors in 2010, expressed as a percentage of Cuba DALYs



COUNTRY BENCHMARKING OF BURDEN OF DISEASE

Understanding the relative performance of Cuba against other comparator countries provides key insight into public health successes and areas where Cuba might be falling behind. The table identifies Cuba's rank across 14 other comparator countries, selected and ordered by income per capita, for five metrics of interest, with 1 indicating the best rank and 15 indicating the worst rank.

- Age-standardized rates are used to make meaningful comparisons across time by adjusting for changes in population size and age structure.
- Life expectancy incorporates mortality, and health-adjusted life expectancy further incorporates years lived in less than ideal health.
- In 2010, Cuba ranked 2nd for age-standardized death rate and 11th for age-standardized YLD rate.

Age-standardized death rates, YLL rates, YLD rates, and life expectancy at birth and health-adjusted life expectancy at birth for 1990 and 2010, both sexes combined																				
Country	Age-standardized death rate (per 100,000)				Age-standardized YLL rate (per 100,000)				Age-standardized YLD rate (per 100,000)				Life expectancy at birth				Health-adjusted life expectancy at birth			
	1990		2010		1990		2010		1990		2010		1990		2010		1990		2010	
	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	LE	Rank	LE	Rank	HALE	Rank	HALE	Rank
Costa Rica	556	1	462	1	13,705	1	10,447	1	11,672	2	10,948	1	76.6	1	79.4	1	66	1	68.9	1
Romania	895	12	712	13	23,494	9	16,325	7	11,261	1	11,043	2	69.9	10	73.8	11	60.9	10	64.4	8
Panama	634	2	545	3	16,812	4	14,027	6	12,186	9	11,151	3	74.5	3	76.7	4	63.9	3	66.5	2
Iran	934	14	640	8	29,033	14	16,780	10	13,288	15	12,619	10	67.5	14	74.4	9	57.2	14	63.2	10
Brazil	854	9	670	9	26,370	11	17,580	11	12,016	5	11,637	4	69.1	11	74.1	10	59.4	11	63.8	9
Serbia	698	6	572	4	16,985	5	12,077	3	12,440	11	11,833	7	73.7	5	76.7	3	63	6	66	3
South Africa	1,133	15	1,266	15	34,540	15	48,286	15	12,905	13	13,826	15	64.6	15	59.9	15	55.5	15	51	15
Cuba	635	3	543	2	15,919	2	11,088	2	11,765	3	12,791	11	74.8	2	77.9	2	64.6	2	65.2	4
Montenegro	674	4	637	7	16,059	3	13,549	4	12,222	10	12,180	8	74.4	4	75.6	5	63.6	4	64.7	7
Suriname	922	13	693	12	27,022	13	20,892	14	12,827	12	12,945	13	68.5	13	72.6	13	58.6	12	60.7	13
Jamaica	676	5	610	5	18,618	6	16,417	6	12,075	6	12,909	12	73.6	6	75.3	6	63.2	5	62.8	11
Macedonia	873	10	682	10	21,414	7	13,939	5	11,940	4	11,694	6	70.9	8	75	8	61.2	7	64.8	5
Saint Vincent and the Grenadines	890	11	753	14	26,567	12	20,602	13	13,233	14	13,056	14	68.7	12	72	14	58.5	13	60.2	14
Dominican Republic	765	8	683	11	23,701	10	18,385	12	12,154	8	12,232	9	70.8	9	73.7	12	60.9	9	62.2	12
Colombia	760	7	617	6	23,157	8	16,372	8	12,110	7	11,643	5	71.1	7	75	7	61.1	8	64.7	6

COUNTRY BENCHMARKING OF BURDEN OF DISEASE, CONTINUED

This figure shows the rank of Cuba relative to the same comparator countries for the leading causes of DALYs in 1990 (top) and 2010 (bottom).

- The columns are ordered by the absolute number of DALYs in Cuba for that particular year, with greatest burden on the left.
- The numbers indicate the rank across countries for each cause in terms of age-standardized DALY rates, with 1 as the best performance and 15 as the worst.

Ranking of leading age-standardized rates of disability-adjusted life years (DALYs) relative to comparator countries in 1990																											
Country	Ischemic heart disease	Stroke	Road injury	Low back pain	Major depressive disorder	Diabetes	Self-harm	Iron-deficiency anemia	Lower respiratory infections	Congenital anomalies	Asthma	Lung cancer	COPD	Anxiety disorders	Interpersonal violence	Falls	Neck pain	Other musculoskeletal	Migraine	Preterm birth complications	Drug use disorders	Diarrheal diseases	Osteoarthritis	Neonatal encephalopathy	Alcohol use disorders		
Costa Rica	2	1	6	8	6	2	9	4	3	13	14	2	7	4	5	6	5	14	4	4	8	5	9	5	11		
Romania	14	14	12	11	2	1	12	5	15	14	3	13	14	1	2	15	14	6	15	2	1	3	5	2	12		
Panama	3	3	9	7	13	5	7	6	6	9	11	5	9	6	10	4	3	12	5	5	7	8	12	7	5		
Iran	15	6	15	15	14	4	2	8	7	15	6	7	10	10	4	10	1	1	1	10	12	7	15	1	1		
Brazil	7	10	14	10	4	7	6	7	13	8	8	8	13	3	13	7	10	7	11	12	14	12	14	12	14		
Serbia	9	13	7	13	8	6	13	1	2	7	2	14	8	15	3	14	13	10	14	8	5	1	3	6	8		
South Africa	4	11	3	6	3	13	5	11	14	3	15	11	15	2	14	1	15	13	2	9	3	15	1	10	7		
Cuba	10	2	13	3	1	10	14	9	4	6	12	12	6	7	8	11	9	5	7	1	9	4	7	3	10		
Montenegro	11	12	5	14	9	9	11	3	1	1	1	15	1	12	6	12	12	8	13	3	6	2	2	8	4		
Suriname	12	9	8	4	10	12	15	13	11	12	10	3	5	11	7	8	4	3	9	15	15	13	8	15	13		
Jamaica	1	8	1	5	5	14	1	12	5	2	9	9	3	5	12	5	7	4	6	6	11	10	13	13	6		
Macedonia	13	15	4	12	7	8	10	2	8	11	4	10	11	13	1	13	11	9	12	11	2	11	4	4	2		
Saint Vincent and the Grenadines	5	7	2	2	15	15	8	15	12	5	13	1	2	14	9	9	8	11	8	14	13	6	11	14	15		
Dominican Republic	8	5	10	1	12	11	3	14	10	10	7	4	4	8	11	3	6	2	10	13	10	14	6	11	3		
Colombia	6	4	11	9	11	3	4	10	9	4	5	6	12	9	15	2	2	15	3	7	4	9	10	9	9		
Ranking of leading age-standardized rates of disability-adjusted life years (DALYs) relative to comparator countries in 2010																											
Country	Ischemic heart disease	Stroke	Major depressive disorder	Low back pain	Diabetes	Lung cancer	COPD	Falls	Road injury	Lower respiratory infections	Iron-deficiency anemia	Adverse medical treatment	Asthma	Neck pain	Other musculoskeletal	Self-harm	Alzheimer's disease	Anxiety disorders	Osteoarthritis	Migraine	Colorectal cancer	Alcohol use disorders	Chronic kidney disease	Interpersonal violence	Cirrhosis		
Costa Rica	3	1	6	7	1	1	7	4	7	4	3	9	15	7	13	10	13	5	11	5	9	12	12	7	12		
Romania	14	14	2	13	2	13	12	15	9	14	5	4	3	14	6	12	4	1	12	15	14	11	2	2	15		
Panama	4	3	5	8	10	5	6	2	11	8	7	6	11	8	11	9	3	6	8	4	7	4	13	9	8		
Iran	15	5	15	15	7	4	9	7	15	6	8	8	6	1	1	3	11	13	15	1	1	1	1	5	2		
Brazil	7	7	11	10	8	9	14	5	13	12	6	7	9	10	10	8	9	8	14	11	10	14	8	13	14		
Serbia	10	13	1	12	6	14	10	13	6	1	1	3	2	11	9	13	6	15	10	13	15	9	3	3	5		
South Africa	2	9	4	6	13	10	15	1	3	15	10	10	8	15	14	2	12	2	1	2	2	8	14	14	10		
Cuba	9	4	12	2	5	12	11	11	4	7	9	11	14	9	4	11	15	7	5	7	12	13	6	6	6		
Montenegro	12	12	13	11	4	15	1	14	10	3	4	1	1	12	7	14	7	14	3	14	11	5	4	4	1		
Suriname	6	11	10	5	12	3	2	8	12	9	15	14	10	6	8	15	10	4	7	10	4	10	15	8	9		
Jamaica	1	10	7	4	14	8	4	9	1	5	12	13	13	4	3	1	8	11	9	9	8	3	10	12	3		
Macedonia	13	15	8	14	9	11	8	10	2	2	2	2	4	13	5	4	2	10	6	12	13	2	5	1	4		
Saint Vincent and the Grenadines	8	6	9	3	15	2	3	12	5	10	14	12	12	3	12	6	14	3	2	6	6	15	9	11	11		
Dominican Republic	11	8	3	1	11	7	5	6	14	13	13	15	7	5	2	5	5	9	4	8	3	6	11	10	13		
Colombia	5	2	14	9	3	6	13	3	8	11	11	5	5	2	15	7	1	12	13	3	5	7	7	15	7		
Ranking Legend	1 - 3			4 - 7			8 - 11			12 - 15																	