

GBD PROFILE: SERBIA

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.

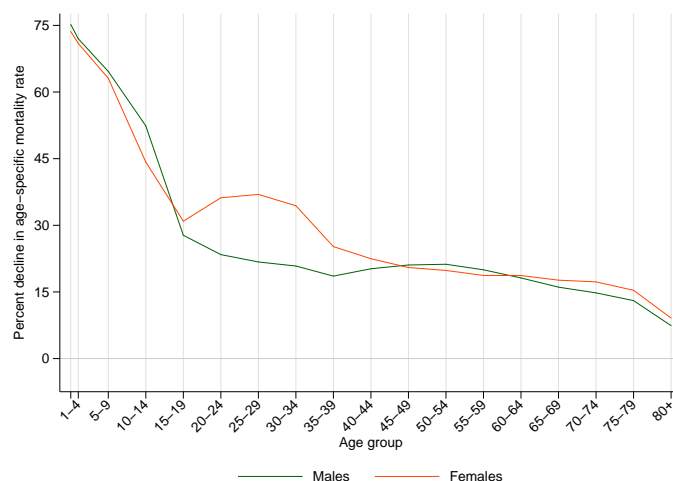
PROFILE OVERVIEW

- In terms of the number of years of life lost (YLLs) due to premature death in Serbia, 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), major depressive disorder showed the largest decrease, falling by 28% from 1990 to 2010.
- The leading risk factor in Serbia is dietary risks.

ALL-CAUSE MORTALITY RATE

- This chart shows the decline in mortality rate at every age range. The higher points on the chart indicate that declines in mortality rates were faster in those age groups between 1990 and 2010.
- The greatest reductions in all-cause mortality rate were experienced by males aged <1 year (75%). Males aged 80+ years saw the smallest decrease in mortality rate (7%).

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



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, Serbia

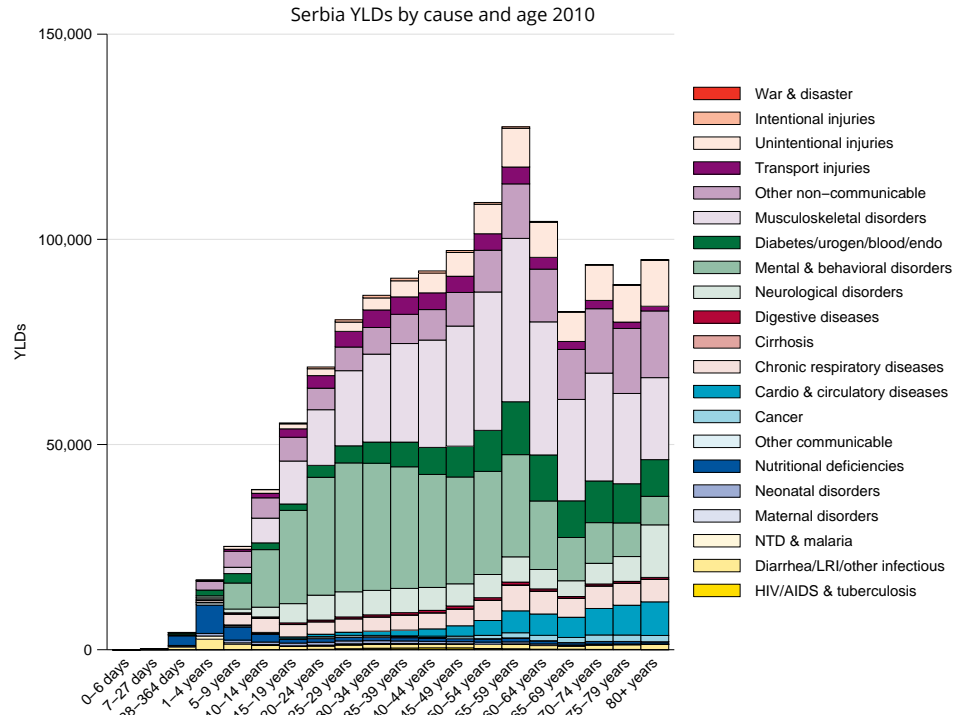
# YLLs in thousands (% of total)	Rank and disorder 1990	Rank and disorder 2010	# YLLs in thousands (% of total)	% change
300 (17.0%)	1 Stroke	1 Ischemic heart disease	333 (19.9%)	12
297 (16.8%)	2 Ischemic heart disease	2 Stroke	314 (18.8%)	4
103 (5.8%)	3 Lung cancer	3 Lung cancer	105 (6.3%)	2
65 (3.7%)	4 Self-harm	4 Self-harm	55 (3.3%)	-17
66 (3.7%)	5 Preterm birth complications	5 Colorectal cancer	51 (3.0%)	37
59 (3.3%)	6 Road injury	6 Diabetes	45 (2.7%)	23
52 (3.0%)	7 Congenital anomalies	7 Road injury	42 (2.5%)	-28
43 (2.4%)	8 Lower respiratory infections	8 COPD	40 (2.4%)	14
37 (2.1%)	9 Other cardio & circulatory	9 Hypertensive heart disease	36 (2.2%)	52
37 (2.1%)	10 Colorectal cancer	10 Other cardio & circulatory	36 (2.1%)	-3
36 (2.1%)	11 Diabetes	11 Breast cancer	35 (2.1%)	11
35 (2.0%)	12 COPD	12 Cirrhosis	24 (1.4%)	0
34 (1.9%)	13 Stomach cancer	13 Stomach cancer	23 (1.4%)	-30
31 (1.8%)	14 Breast cancer	14 Pancreatic cancer	21 (1.2%)	28
24 (1.4%)	15 Cirrhosis	15 Brain cancer	21 (1.2%)	18
24 (1.4%)	16 Hypertensive heart disease	16 Cardiomyopathy	21 (1.2%)	27
25 (1.4%)	17 Neonatal encephalopathy	17 Chronic kidney disease	19 (1.1%)	17
18 (1.0%)	18 Brain cancer	18 Lower respiratory infections	16 (1.0%)	-61
18 (1.0%)	19 Interpersonal violence	19 Liver cancer	16 (1.0%)	4
16 (0.9%)	20 Chronic kidney disease	20 HIV/AIDS	17 (1.0%)	27
16 (0.9%)	21 Cardiomyopathy	21 Leukemia	15 (0.9%)	-2
16 (0.9%)	22 Pancreatic cancer	22 Cervical cancer	15 (0.9%)	-9
16 (0.9%)	23 Cervical cancer	23 Preterm birth complications	14 (0.8%)	-78
16 (0.9%)	24 Liver cancer	24 Prostate cancer	14 (0.8%)	72
15 (0.8%)	25 Leukemia	25 Congenital anomalies	13 (0.8%)	-75
	34 Prostate cancer	26 Interpersonal violence		
	48 HIV/AIDS	44 Neonatal encephalopathy		

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 Serbia are low back pain, anxiety disorders, major depressive disorder, falls, 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.

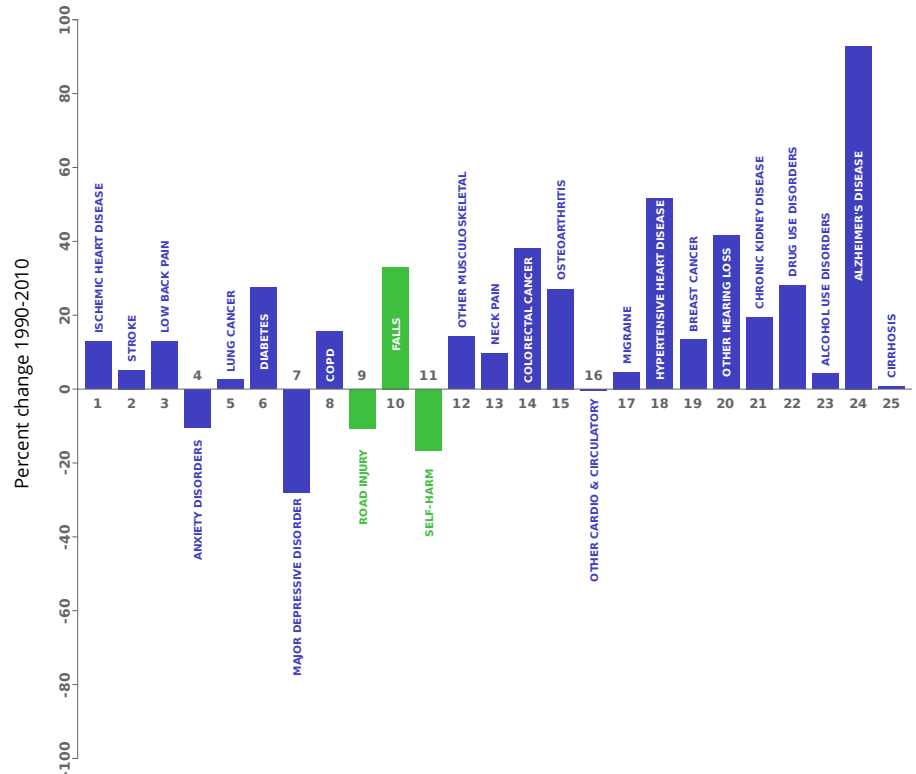


DISABILITY-ADJUSTED LIFE YEARS (DALYs)

Disability-adjusted life years (DALYs) quantify both premature mortality (YLLs) and disability (YLDs) within a population. In Serbia, the top three causes of DALYs in 2010 were ischemic heart disease, cerebrovascular disease, and low back pain. The only cause to appear in the 10 leading causes of DALYs in 2010 and not 1990 was 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.

Leading causes of DALYs and percent change 1990 to 2010 for Serbia

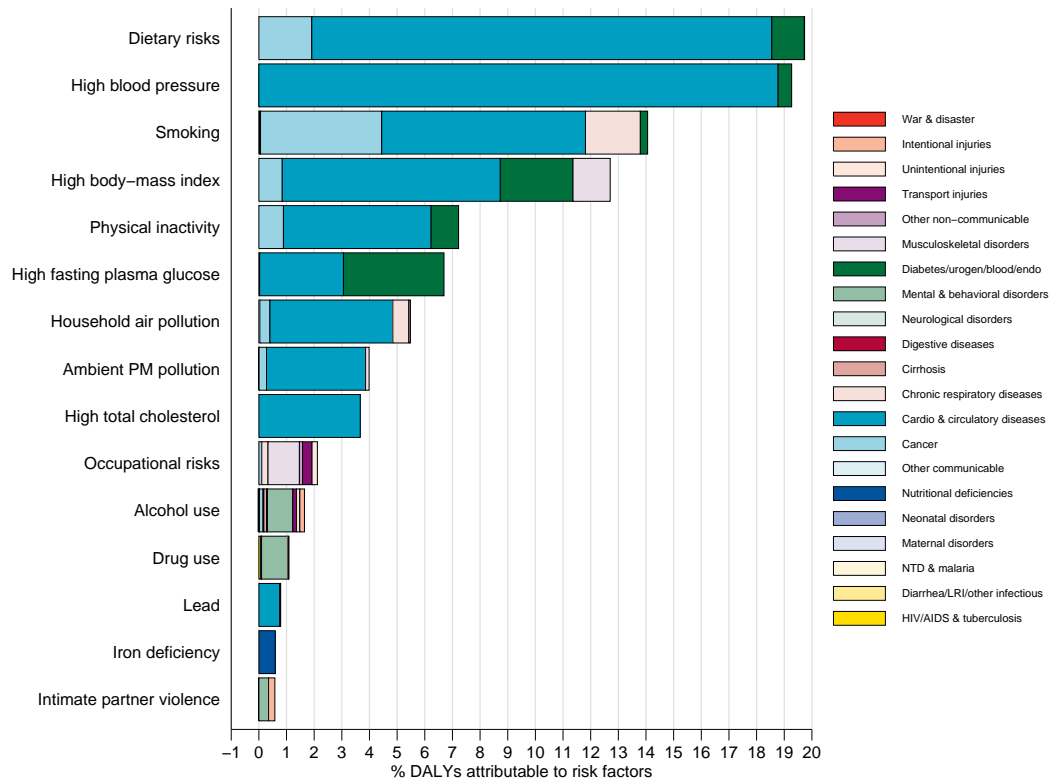


RISK FACTORS

Overall, the three risk factors that account for the most disease burden in Serbia are dietary risks, high blood pressure, and tobacco smoking. The leading risk factors for children under 5 and adults aged 15-49 years were household air pollution from solid fuels and dietary risks, respectively, in 2010.

The graph shows the top 15 risk factors for Serbia. 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 Serbia DALYs



COUNTRY BENCHMARKING OF BURDEN OF DISEASE

Understanding the relative performance of Serbia against other comparator countries provides key insight into public health successes and areas where Serbia might be falling behind. The table identifies Serbia'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, Serbia ranked 3rd for health-adjusted life expectancy and 7th 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
Grenada	904	11	850	13	25,983	9	21,313	13	13,149	13	13,076	14	68.9	10	71	13	58.7	10	59.6	13
Kazakhstan	1,043	14	1,043	14	31,524	14	29,881	14	11,955	5	11,587	4	66.2	14	66.7	14	57.3	13	58.2	14
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	10	712	11	23,494	8	16,325	7	11,261	1	11,043	2	69.9	8	73.8	10	60.9	8	64.4	7
Panama	634	2	545	3	16,812	4	14,027	6	12,186	8	11,151	3	74.5	3	76.7	4	63.9	3	66.5	2
Iran	934	13	640	7	29,033	13	16,780	9	13,288	15	12,619	9	67.5	13	74.4	8	57.2	14	63.2	9
Brazil	854	7	670	8	26,370	10	17,580	10	12,016	6	11,637	5	69.1	9	74.1	9	59.4	9	63.8	8
Serbia	698	6	572	4	16,985	5	12,077	3	12,440	10	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	12	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	10	74.8	2	77.9	2	64.6	2	65.2	4
Montenegro	674	4	637	6	16,059	3	13,549	4	12,222	9	12,180	8	74.4	4	75.6	5	63.6	4	64.7	6
Suriname	922	12	693	10	27,022	12	20,892	12	12,827	11	12,945	12	68.5	12	72.6	11	58.6	11	60.7	11
Jamaica	676	5	610	5	18,618	6	16,417	8	12,075	7	12,909	11	73.6	6	75.3	6	63.2	5	62.8	10
Macedonia	873	8	682	9	21,414	7	13,939	5	11,940	4	11,694	6	70.9	7	75	7	61.2	7	64.8	5
Saint Vincent and the Grenadines	890	9	753	12	26,567	11	20,602	11	13,233	14	13,056	13	68.7	11	72	12	58.5	12	60.2	12

COUNTRY BENCHMARKING OF BURDEN OF DISEASE, CONTINUED

This figure shows the rank of Serbia 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 Serbia 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	Low back pain	Anxiety disorders	Major depressive disorder	Lung cancer	Road injury	Diabetes	COPD	Preterm birth complications	Self-harm	Falls	Congenital anomalies	Neck pain	Other musculoskeletal	Lower respiratory infections	Other cardio & circulatory	Migraine	Colorectal cancer	Osteoarthritis	Stomach cancer	Breast cancer	Neonatal encephalopathy	Asthma	Alcohol use disorders
Grenada	8	11	2	9	12	1	4	11	4	11	4	7	4	3	13	12	14	9	3	12	5	1	13	11	14
Kazakhstan	15	13	10	7	4	15	14	3	14	10	15	14	14	13	14	15	1	11	14	14	15	11	15	3	9
Costa Rica	2	1	8	4	7	3	7	2	7	4	8	4	12	5	15	3	4	3	4	8	14	6	5	14	10
Romania	13	14	11	1	2	12	11	1	13	2	11	15	13	14	5	14	12	15	11	5	11	9	2	4	11
Panama	3	3	7	6	13	5	10	5	9	5	6	2	9	2	11	6	2	4	7	10	9	4	7	10	4
Iran	14	4	15	10	14	6	15	4	10	9	2	9	15	1	1	7	15	1	1	15	13	2	1	6	1
Brazil	6	8	9	3	5	7	13	7	12	13	5	5	8	9	6	11	7	10	5	13	8	5	10	7	13
Serbia	7	12	13	15	9	13	8	6	8	7	12	13	7	12	9	2	6	14	15	3	6	12	6	2	7
South Africa	4	9	6	2	3	10	3	13	15	8	3	1	3	15	12	13	11	2	10	1	4	8	9	15	6
Cuba	9	2	3	8	1	11	12	10	6	1	13	10	6	8	4	4	3	6	13	6	1	7	3	12	8
Montenegro	10	10	14	12	10	14	6	9	1	3	10	11	1	11	7	1	8	13	8	2	3	10	8	1	3
Suriname	11	7	4	11	11	4	9	12	5	15	14	6	11	4	2	9	9	8	6	7	2	3	14	9	12
Jamaica	1	6	5	5	6	8	1	14	3	6	1	3	2	6	3	5	5	5	9	11	7	14	11	8	5
Macedonia	12	15	12	13	8	9	5	8	11	12	9	12	10	10	8	8	10	12	12	4	12	13	4	5	2
Saint Vincent and the Grenadines	5	5	1	14	15	2	2	15	2	14	7	8	5	7	10	10	13	7	2	9	10	15	12	13	15
Ranking of leading age-standardized rates of disability-adjusted life years (DALYs) relative to comparator countries in 2010																									
Country	Ischemic heart disease	Stroke	Low back pain	Anxiety disorders	Lung cancer	Diabetes	Major depressive disorder	COPD	Road injury	Falls	Self-harm	Other musculoskeletal	Neck pain	Colorectal cancer	Osteoarthritis	Other cardio & circulatory	Migraine	Hypertensive heart disease	Breast cancer	Other hearing loss	Chronic kidney disease	Drug use disorders	Alcohol use disorders	Alzheimer's disease	Cirrhosis
Grenada	9	9	1	3	5	15	11	4	8	8	3	15	5	8	9	15	7	11	11	1	12	14	13	14	12
Kazakhstan	15	15	10	10	12	4	2	14	14	12	15	11	14	13	13	1	11	10	14	7	7	4	14	4	15
Costa Rica	3	1	7	6	1	1	6	7	7	3	9	13	6	7	11	4	4	4	4	14	11	7	10	12	11
Romania	13	13	13	1	13	2	3	12	9	15	11	5	13	14	12	9	15	14	10	8	2	2	9	3	14
Panama	4	2	8	7	6	10	5	6	11	2	8	10	7	5	7	2	3	2	2	15	13	8	4	2	7
Iran	14	4	15	13	4	7	15	9	15	5	4	1	1	1	15	14	1	9	1	6	1	12	1	10	2
Brazil	6	6	9	9	8	8	12	13	13	4	7	9	9	9	14	5	10	6	6	12	8	10	12	8	13
Serbia	10	12	12	15	14	6	1	10	6	13	12	8	10	15	10	7	13	5	12	9	3	5	7	5	5
South Africa	2	7	6	2	9	12	4	15	3	1	2	14	15	2	1	11	2	15	5	13	14	15	6	11	9
Cuba	8	3	2	8	11	5	13	11	4	10	10	3	8	11	4	3	6	3	7	2	6	6	11	15	6
Montenegro	11	11	11	14	15	3	14	1	10	14	13	6	11	10	3	10	14	1	15	10	4	3	5	6	1
Suriname	5	10	5	5	3	11	10	2	12	6	14	7	4	3	6	8	9	7	3	3	15	11	8	9	8
Jamaica	1	8	4	12	7	13	7	5	1	7	1	2	3	6	8	6	8	13	9	4	10	9	3	7	3
Macedonia	12	14	14	11	10	9	8	8	2	9	5	4	12	12	5	12	12	8	13	11	5	1	2	1	4
Saint Vincent and the Grenadines	7	5	3	4	2	14	9	3	5	11	6	12	2	4	2	13	5	12	8	5	9	13	15	13	10
Ranking Legend	1 - 3			4 - 7				8 - 11				12 - 15													