

GBD PROFILE: NIGER

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.

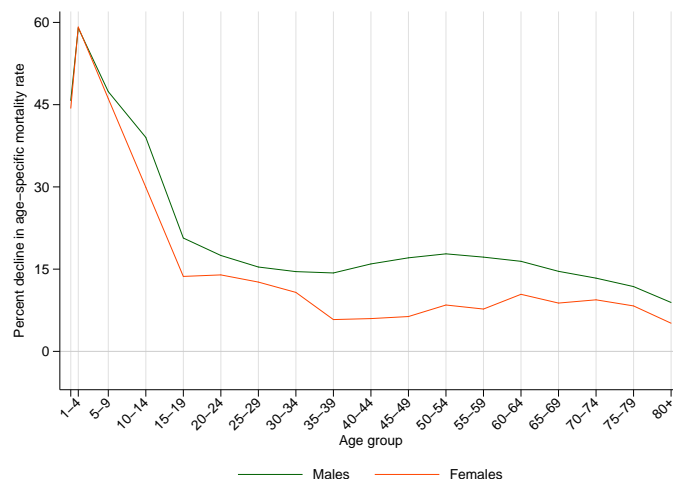
PROFILE OVERVIEW

- In terms of the number of years of life lost (YLLs) due to premature death in Niger, diarrheal diseases, malaria, and lower respiratory infections were the highest ranking causes in 2010.
- Of the 25 most important causes of burden, as measured by disability-adjusted life years (DALYs), measles showed the largest decrease, falling by 67% from 1990 to 2010.
- The leading risk factor in Niger is childhood underweight.

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 females aged 1-4 years (59%). Females aged 80+ years saw the smallest decrease in mortality rate (5%).

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



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, Niger

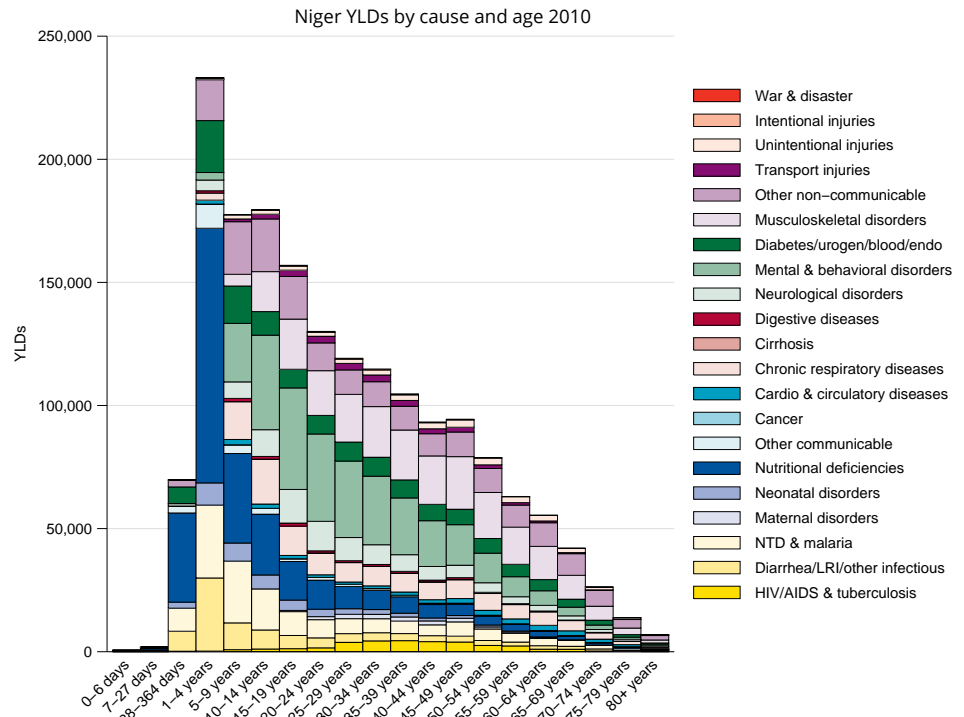
# YLLs in thousands (% of total)	Rank and disorder 1990	Rank and disorder 2010	# YLLs in thousands (% of total)	% change
3,224 (25.9%)	1 Diarrheal diseases	1 Diarrheal diseases	2,157 (17.4%)	-33
1,986 (16.0%)	2 Lower respiratory infections	2 Malaria	1,984 (15.8%)	207
1,026 (8.3%)	3 Protein-energy malnutrition	3 Lower respiratory infections	1,713 (13.9%)	-13
736 (5.9%)	4 Measles	4 Protein-energy malnutrition	891 (7.2%)	-13
685 (5.5%)	5 Malaria	5 Meningitis	564 (4.6%)	16
483 (3.9%)	6 Meningitis	6 Neonatal sepsis	438 (3.6%)	58
286 (2.3%)	7 Preterm birth complications	7 Preterm birth complications	371 (3.0%)	30
281 (2.3%)	8 Neonatal sepsis	8 Tuberculosis	253 (2.1%)	26
250 (2.0%)	9 Tetanus	9 Neonatal encephalopathy	246 (2.0%)	38
203 (1.6%)	10 Tuberculosis	10 Measles	244 (2.0%)	-67
178 (1.4%)	11 Neonatal encephalopathy	11 HIV/AIDS	172 (1.4%)	232
158 (1.3%)	12 Iron-deficiency anemia	12 Maternal disorders	157 (1.3%)	54
153 (1.2%)	13 Syphilis	13 Stroke	144 (1.2%)	28
124 (1.0%)	14 Congenital anomalies	14 Congenital anomalies	142 (1.2%)	14
111 (0.9%)	15 Stroke	15 Syphilis	142 (1.2%)	-7
101 (0.8%)	16 Maternal disorders	16 Fire	131 (1.1%)	30
97 (0.8%)	17 Road injury	17 Tetanus	143 (1.2%)	-46
102 (0.8%)	18 Fire	18 Road injury	127 (1.0%)	29
94 (0.8%)	19 Epilepsy	19 Epilepsy	138 (1.1%)	69
68 (0.5%)	20 Ischemic heart disease	20 Iron-deficiency anemia	109 (0.9%)	-31
64 (0.5%)	21 Falls	21 Ischemic heart disease	94 (0.8%)	39
58 (0.5%)	22 COPD	22 Falls	68 (0.6%)	10
64 (0.5%)	23 Asthma	23 Cirrhosis	62 (0.5%)	44
65 (0.5%)	24 Mechanical forces	24 Diabetes	53 (0.4%)	93
201 (1.6%)	25 Whooping cough	25 Sickle cell	51 (0.4%)	69
	26 HIV/AIDS	29 Asthma		
	29 Cirrhosis	31 Whooping cough		
	33 Sickle cell	32 Mechanical forces		
	38 Diabetes	33 COPD		

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 Niger are iron-deficiency anemia, major depressive disorder, low back pain, malaria, and neck pain.

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.

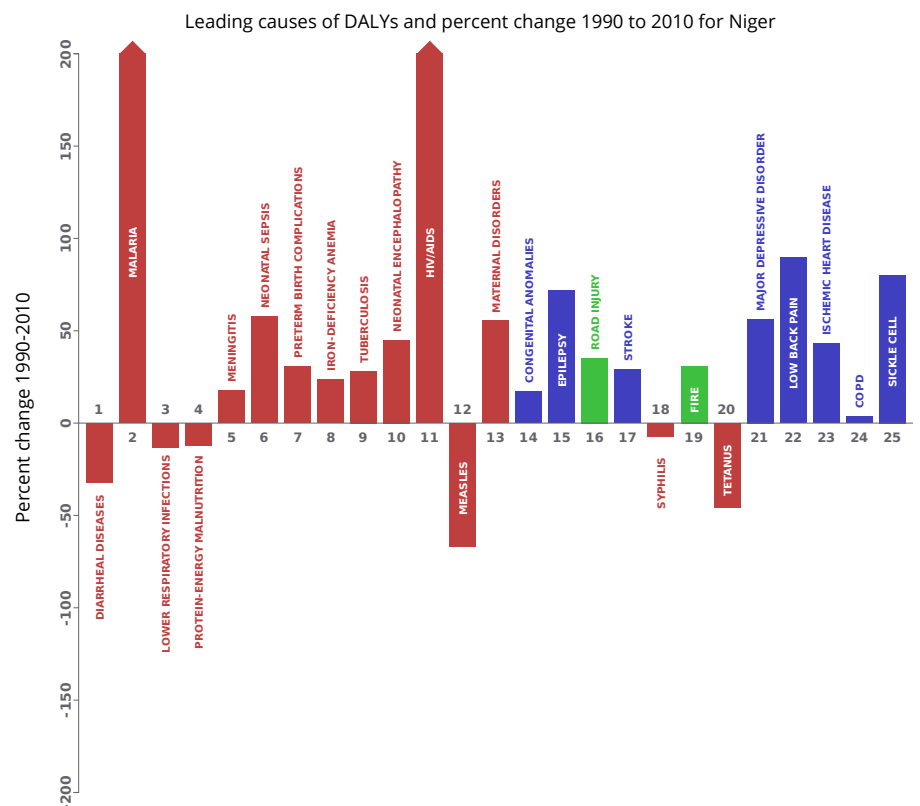


DISABILITY-ADJUSTED LIFE YEARS (DALYs)

Disability-adjusted life years (DALYs) quantify both premature mortality (YLLs) and disability (YLDs) within a population. In Niger, the top three causes of DALYs in 2010 were diarrheal diseases, malaria, and lower respiratory infections. Two causes that appeared in the 10 leading causes of DALYs in 2010 and not 1990 were tuberculosis and neonatal encephalopathy (birth asphyxia and birth trauma).

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.

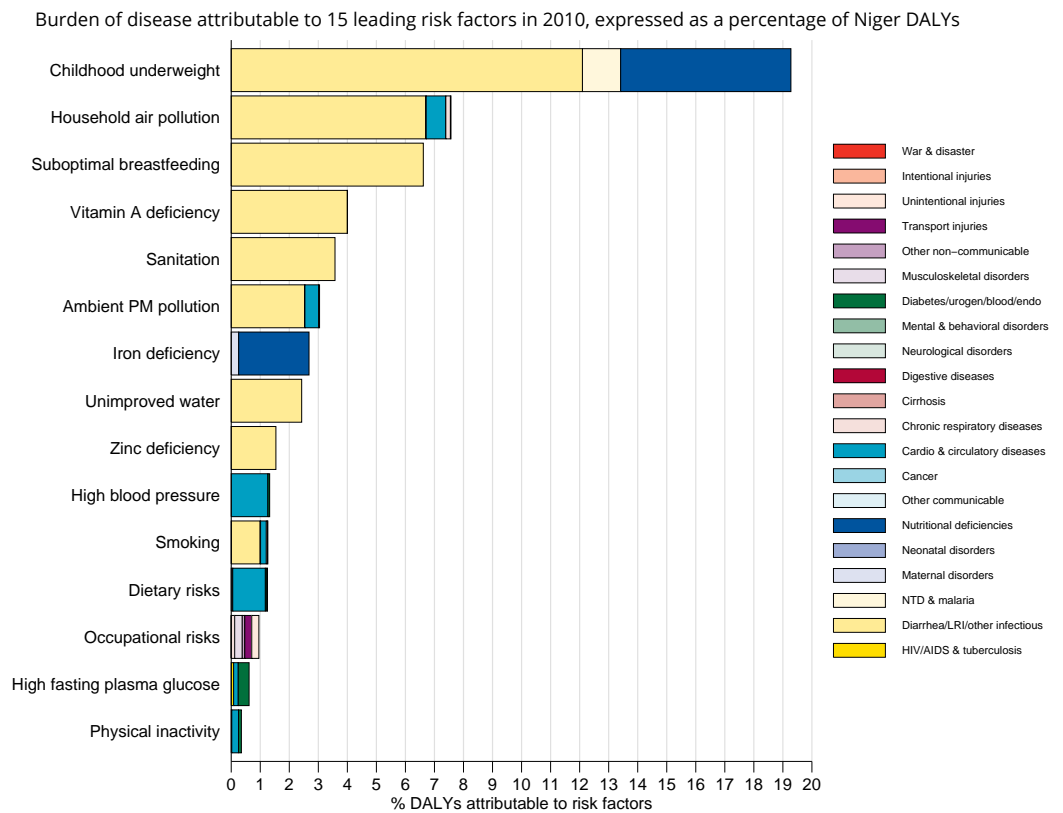
- Communicable, maternal, neonatal, and nutritional
- Non-communicable
- Injuries



RISK FACTORS

Overall, the three risk factors that account for the most disease burden in Niger are childhood underweight, household air pollution from solid fuels, and suboptimal breastfeeding. The leading risk factors for children under 5 and adults aged 15-49 years were childhood underweight and iron deficiency, respectively, in 2010.

The graph shows the top 15 risk factors for Niger. 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.



COUNTRY BENCHMARKING OF BURDEN OF DISEASE

Understanding the relative performance of Niger against other comparator countries provides key insight into public health successes and areas where Niger might be falling behind. The table identifies Niger'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, Niger ranked 2nd for age-standardized YLD rate and 7th for life expectancy.

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
Afghanistan	1,931	12	1,668	10	68,958	6	52,078	6	17,727	15	17,252	15	51.9	6	57.7	6	42.4	7	47.3	9
Madagascar	1,451	3	1,156	1	56,586	3	37,200	1	14,116	2	14,145	4	56.1	3	63.6	1	47.6	3	53.8	1
Togo	1,282	2	1,199	2	51,184	2	46,594	4	14,577	5	13,973	3	58.3	2	60.2	4	49.1	2	51	4
Mozambique	1,659	6	1,725	11	74,370	8	67,547	14	15,342	11	14,841	9	50	8	52.5	14	41.9	8	44.5	14
Sierra Leone	1,682	7	1,347	6	78,271	10	49,641	5	15,322	10	15,221	13	48.9	10	58.6	5	40.9	12	49.1	5
Ethiopia	2,152	15	1,292	4	86,420	14	43,719	2	13,713	1	12,723	1	46.7	14	60.9	2	40.2	14	52.5	2
Malawi	1,768	10	1,730	12	79,007	11	66,486	13	15,082	8	14,549	7	48.7	11	52.9	13	41	11	45	12
Central African Republic	2,131	14	2,408	15	81,026	13	90,581	15	15,696	14	15,022	10	48.3	12	46.2	15	40.8	13	39.5	15
Eritrea	1,807	11	1,353	7	67,111	5	44,346	3	15,508	13	14,614	8	52.4	5	60.6	3	44	5	51.2	3
Somalia	1,738	8	1,606	9	70,184	7	57,208	9	14,350	3	14,546	6	51.3	7	55.8	9	43.6	6	47.4	8
Niger	1,765	9	1,268	3	88,497	15	52,955	7	14,526	4	13,915	2	46.1	15	57.7	7	39	15	48.9	6
Zimbabwe	1,144	1	1,801	14	39,368	1	65,919	12	15,058	7	15,659	14	63	1	53.1	12	52.7	1	44.7	13
Liberia	1,585	5	1,333	5	75,995	9	53,808	8	15,298	9	15,200	12	49.6	9	57.2	8	41.4	9	47.7	7
Burundi	1,966	13	1,759	13	80,347	12	62,752	11	14,581	6	14,412	5	48.3	13	54	11	41.1	10	46	11
Democratic Republic of the Congo	1,568	4	1,506	8	65,799	4	59,031	10	15,361	12	15,099	11	52.9	4	55.2	10	44.3	4	46.4	10

COUNTRY BENCHMARKING OF BURDEN OF DISEASE, CONTINUED

This figure shows the rank of Niger 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 Niger 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	Diarrheal diseases	Lower respiratory infections	Protein-energy malnutrition	Malaria	Measles	Meningitis	Iron-deficiency anemia	Preterm birth complications	Neonatal sepsis	Tetanus	Tuberculosis	Neonatal encephalopathy	Syphilis	Congenital anomalies	Stroke	Maternal disorders	Road injury	Fire	COPD	Epilepsy	Asthma	Ischemic heart disease	Major depressive disorder	Falls	HIV/AIDS
Afghanistan	3	13	2	2	2	6	2	4	2	15	4	1	1	14	15	7	15	8	4	1	13	15	15	11	1
Madagascar	6	3	8	4	10	2	3	10	8	3	1	2	14	11	14	4	9	6	9	7	4	13	2	2	5
Togo	2	2	3	7	8	8	10	8	13	5	2	11	10	3	7	3	8	2	3	11	10	5	10	12	10
Mozambique	7	10	4	15	11	10	8	12	15	4	11	14	15	4	1	9	2	11	1	12	1	1	12	10	3
Sierra Leone	4	12	15	13	7	13	15	15	10	12	5	15	6	8	8	5	7	7	10	14	9	7	3	15	2
Ethiopia	8	14	6	5	15	12	5	13	6	14	13	6	8	9	4	13	12	14	13	5	12	4	1	7	7
Malawi	13	5	7	12	3	5	6	2	12	9	8	13	5	15	12	10	10	13	5	6	2	12	5	3	14
Central African Republic	11	6	13	11	6	14	12	9	3	8	15	5	13	13	11	11	13	3	15	4	11	14	14	9	11
Eritrea	12	8	9	3	14	7	11	1	5	7	12	4	9	1	10	15	6	9	11	8	6	10	13	4	4
Somalia	10	11	11	8	4	9	4	5	7	10	9	7	3	6	9	12	11	10	8	10	8	9	11	5	9
Niger	15	15	14	6	13	15	14	3	11	13	7	8	11	5	5	8	4	12	7	15	14	6	4	14	8
Zimbabwe	1	1	1	1	1	1	7	6	1	1	3	3	2	2	1	1	1	1	2	2	3	2	8	1	15
Liberia	14	7	5	9	9	11	9	14	14	11	6	12	7	10	3	6	5	5	14	13	15	3	9	13	6
Burundi	9	9	12	14	5	4	1	7	9	6	14	10	4	7	13	14	14	15	12	9	5	11	7	8	13
Democratic Republic of the Congo	5	4	10	10	12	3	13	11	4	2	10	9	12	12	6	2	3	4	6	3	7	8	6	6	12
Ranking of leading age-standardized rates of disability-adjusted life years (DALYs) relative to comparator countries in 2010																									
Country	Diarrheal diseases	Malaria	Lower respiratory infections	Protein-energy malnutrition	Meningitis	Neonatal sepsis	Preterm birth complications	Iron-deficiency anemia	Tuberculosis	Neonatal encephalopathy	HIV/AIDS	Measles	Maternal disorders	Congenital anomalies	Epilepsy	Road injury	Stroke	Syphilis	Fire	Tetanus	Major depressive disorder	Low back pain	Ischemic heart disease	COPD	Sickle cell
Afghanistan	1	1	8	1	4	1	12	1	3	1	1	2	10	13	1	14	15	1	6	15	15	15	15	12	4
Madagascar	3	5	1	5	1	10	6	5	1	2	2	13	4	1	6	4	14	13	3	3	6	12	13	8	8
Togo	7	9	6	4	11	14	9	8	2	11	10	11	1	10	13	6	5	12	4	8	3	9	7	1	13
Mozambique	4	15	2	3	7	13	8	6	10	15	13	5	7	2	12	12	1	14	8	4	4	13	1	4	6
Sierra Leone	2	11	5	13	13	9	15	15	5	13	6	9	6	6	11	5	7	3	1	13	7	7	8	3	12
Ethiopia	5	3	11	7	6	5	14	2	7	3	4	15	3	3	5	9	2	9	7	12	1	1	2	10	2
Malawi	8	6	9	6	3	11	1	4	6	12	14	4	13	12	7	13	12	7	15	7	10	2	12	6	7
Central African Republic	15	12	14	15	15	3	13	13	14	6	12	7	15	15	4	15	10	15	12	9	8	5	14	15	14
Eritrea	9	4	3	9	8	8	3	11	9	5	5	10	11	4	10	8	9	6	11	2	14	10	9	5	5
Somalia	12	7	12	12	10	6	4	9	12	7	8	1	14	5	9	7	8	2	13	11	12	14	6	7	3
Niger	14	8	15	11	14	12	2	14	4	4	3	14	8	7	14	2	4	10	10	14	2	6	5	2	11
Zimbabwe	6	2	13	2	2	2	7	10	11	8	15	12	2	11	2	10	6	5	2	1	13	3	3	13	1
Liberia	11	13	10	8	12	15	11	7	8	14	7	8	12	9	15	3	3	8	5	10	5	8	4	14	10
Burundi	10	14	7	10	5	7	5	3	15	10	11	6	9	8	8	11	13	4	14	5	11	11	10	9	9
Democratic Republic of the Congo	13	10	4	14	9	4	10	12	13	9	9	3	5	14	3	1	11	11	9	6	9	4	11	11	15
Ranking Legend	1 - 3			4 - 7			8 - 11			12 - 15															