

Diabetes and kidney diseases—Level 2 cause

Summary This aggregate disease category resulted in 124 million (95% UI 110–142) global DALYs in 2021 and was responsible for 4.3% (4.0–4.6) of total global DALYs. Diabetes contributed 63.7% (60.4–67.3), and chronic kidney disease (CKD) contributed 36.0% (32.5–39.4) of total DALYs in this category.

Abbreviated Definition This aggregate category consists of types 1 and 2 diabetes and of CKD due to these aetiologies: hypertension, glomerulonephritis, other and unspecified causes, and types 1 and 2 diabetes. Both types of diabetes are important aetiologies of CKD.

Total sources

Incidence	1947
Prevalence	2393
Remission	0
Causes of death	4025
Other	614

Table 1: Total sources used in GBD 2021 estimation

What is new in GBD 2021?

- In addition to 115 new data sources in the non-fatal total diabetes model, an audit of the current data resulted in 26% of reviewed sources being excluded from the model.
- We re-extracted data from the 1998–2017 European Renal Association–European Dialysis and Transplant Association.
- We sex-split data in MR-BRT by super-region for the dialysis, transplant, Stage 3–5, Stage 3, and Stage 4 models. For the CKD Stage 1–2 and CKD Stage 5 models, we sex-split the data using the global sex coefficient.
- We removed the previous CKD criterion that datapoints could only be age-split if the number of cases divided by the number of age groups was less than 1. Also, age ranges of ≤ 30 were used to estimate the age pattern for all CKD models.
- We age-split the end-stage renal disease proportion data using dialysis prevalence as the denominator instead of population.

	Prevalence		Incidence		Deaths		YLLs		YLDs		DALYs	
	Cases (millions)	Rate (per 100 000)	Cases (millions)	Rate (per 100 000)	Deaths (millions)	Rate (per 100 000)	YLLs (millions)	Rate (per 100 000)	YLDs (millions)	Rate (per 100 000)	DALYs (millions)	Rate (per 100 000)
2021												
Both Sexes	1080 (1030 to 1130)	12739.2 (12139.3 to 13360.3)	44.9 (42.7 to 47.3)	527.5 (502.3 to 555.2)	3.20 (2.96 to 3.39)	38.2 (35.2 to 40.6)	73.7 (68.9 to 78.4)	867.9 (811.2 to 923.5)	50.0 (35.7 to 67.4)	581.9 (415.3 to 783.9)	124 (110 to 142)	1449.7 (1285.3 to 1666.5)
Females	552 (526 to 578)	12579.8 (11978.4 to 13196.3)	23.1 (22.0 to 24.4)	525.7 (500.8 to 553.6)	1.60 (1.45 to 1.72)	34.6 (31.4 to 37.3)	35.0 (32.3 to 37.6)	778.4 (718.2 to 836.6)	24.7 (17.7 to 33.1)	551.5 (395.1 to 741.1)	59.7 (52.9 to 68.9)	1329.9 (1177.8 to 1535.8)
Males	529 (504 to 555)	12896.0 (12301.9 to 13529.8)	21.8 (20.7 to 23.0)	528.4 (503.7 to 557.0)	1.60 (1.47 to 1.71)	43.0 (39.4 to 46.0)	38.7 (35.9 to 41.5)	969.3 (897.9 to 1038.5)	25.3 (18.0 to 34.4)	615.5 (438.7 to 831.5)	64.0 (56.0 to 73.4)	1584.9 (1392.2 to 1811.5)
Percentage change 2010–21												
Both Sexes	38.3% (37.2 to 39.6)	10.1% (9.3 to 11.0)	44.6% (42.9 to 46.1)	14.2% (12.8 to 15.6)	42.5% (35.3 to 48.6)	3.8% (–1.1 to 8.4)	35.6% (28.2 to 42.6)	3.6% (–2.0 to 9.0)	55.5% (52.6 to 58.5)	20.0% (17.7 to 22.2)	43.0% (38.2 to 47.4)	9.6% (6.0 to 13.0)
Females	37.6% (36.5 to 38.8)	9.5% (8.8 to 10.4)	44.3% (42.5 to 46.1)	13.8% (12.4 to 15.3)	43.0% (35.4 to 51.0)	4.3% (–1.2 to 10.3)	36.5% (28.6 to 45.4)	3.9% (–2.1 to 10.7)	54.8% (51.9 to 57.8)	19.6% (17.3 to 21.8)	43.5% (37.7 to 48.9)	9.9% (5.3 to 14.1)
Males	39.0% (37.8 to 40.4)	10.7% (9.9 to 11.6)	44.8% (43.3 to 46.2)	14.6% (13.3 to 15.9)	42.0% (32.9 to 50.8)	2.8% (–3.6 to 8.9)	34.7% (25.7 to 43.5)	3.1% (–3.5 to 9.6)	56.2% (53.3 to 59.1)	20.3% (17.9 to 22.6)	42.5% (36.2 to 48.5)	9.2% (4.5 to 13.7)

Numbers in parentheses are 95% uncertainty intervals.

Table 2: Global prevalence, incidence, deaths, YLLs, YLDs, and DALYs in counts and age-standardised rates for both sexes, females, and males, 2021, with percentage change between 2010 and 2021

	Deaths	YLLs	YLDs	DALYs
1990	11th	15th	12th	18th
2010	7th	15th	9th	13th
2021	5th	7th	6th	8th

Table 3: Rank among Level 2 causes for global deaths, YLLs, YLDs, and DALYs in 1990, 2010, and 2021, for both sexes combined

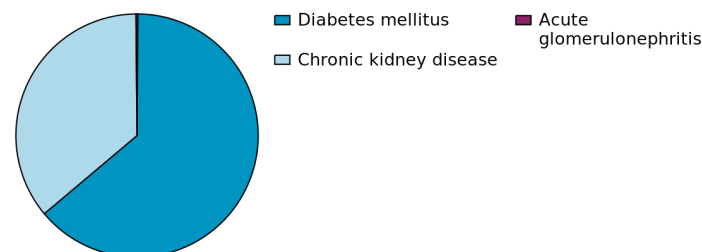


Figure 1: Composition of DALYs by constituent level 3 causes for both sexes combined, 2021

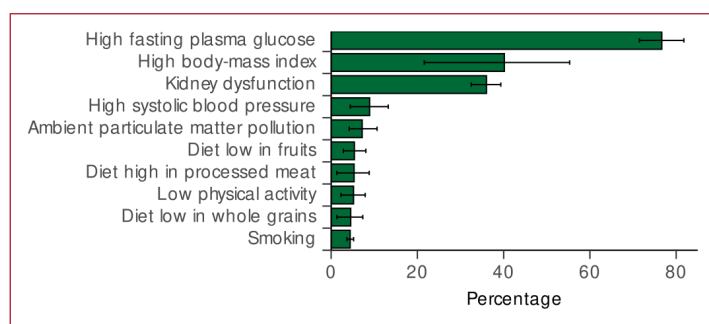


Figure 2: Percentage of DALYs attributable to top risk factors for both sexes combined, 2021

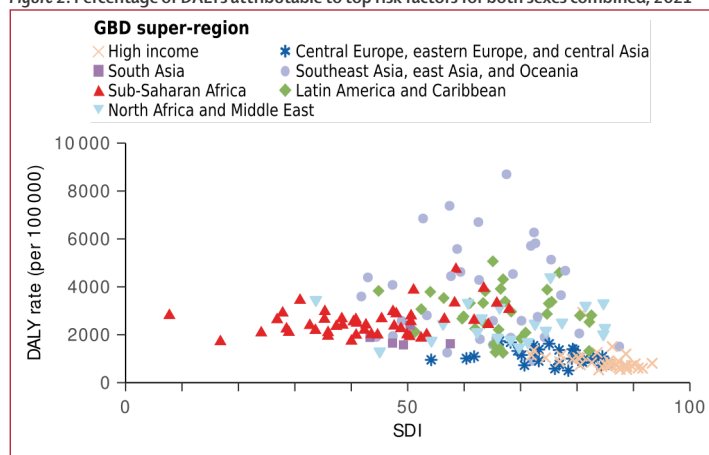


Figure 3: Age-standardised DALY rates for each location by SDI, both sexes combined, 2021

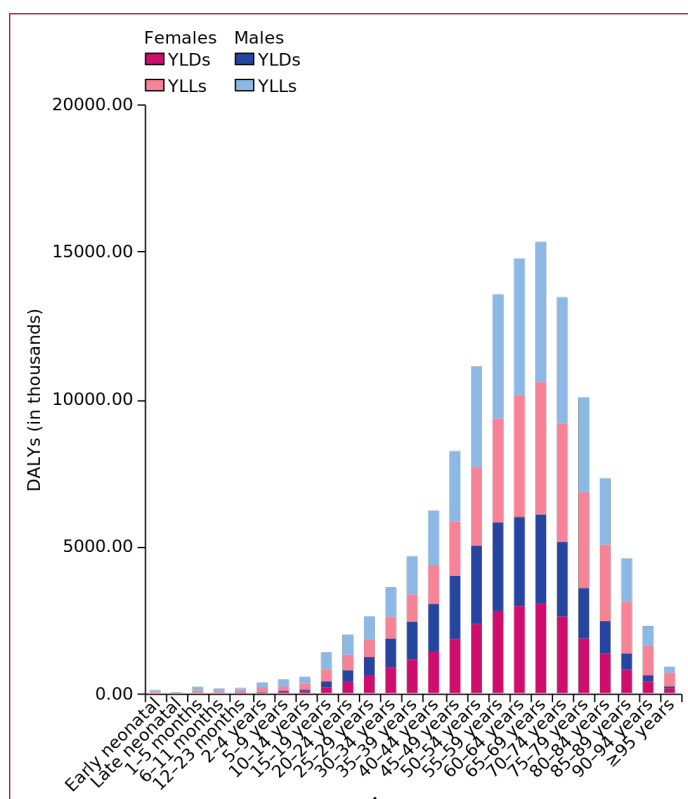


Figure 4: Composition of DALYs by YLLs and YLDs, age group, and sex, 2021

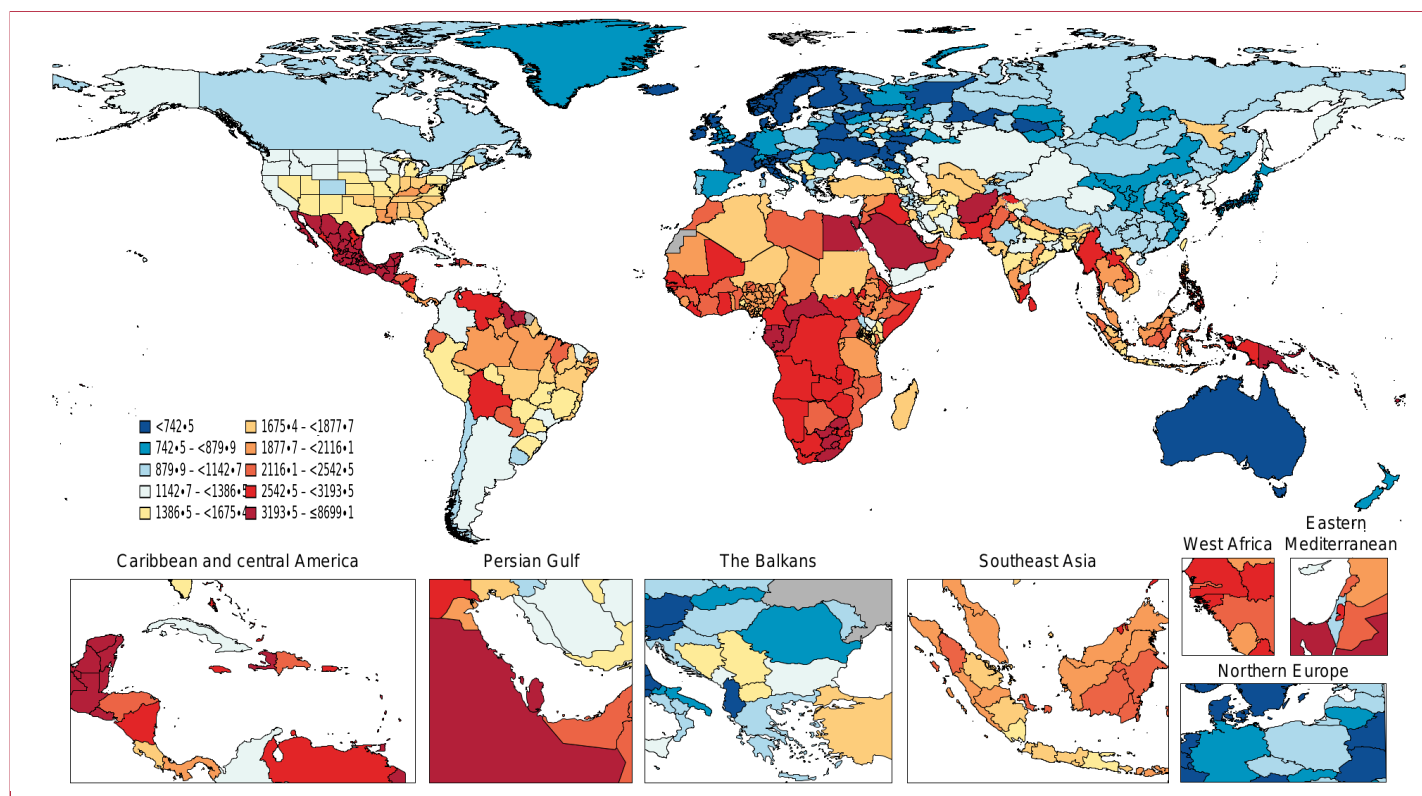


Figure 5: Age-standardised DALY rates (per 100,000) by location, both sexes combined, 2021