Chagas disease—Level 3 cause

Summary Chagas disease was responsible for 9490 deaths (95% UI 5500–16 500) and 275 000 DALYs (184 000–459 000) in 2019. Chagas is endemic in Latin American countries, but cases are also found in other locations due to migration.

Definition Chagas disease is caused by infection with *Trypanosoma cruzi*, which is transmitted by *Triatominae* insect vectors, blood transfusion, organ transplant, and congenital transmission. Estimates include prevalent cases in non-endemic locations due to migration.

	Total sources
Incidence	0
Prevalence	81
Remission	0
Causes of death	2013
Other	4

Table 1: Total sources used in GBD 2019 estimation

What is new in GBD 2019?

- An age pattern for Chagas seroprevalence was modelled in DisMod-MR using age-specific seroprevalance data. Data for which seroprevalence was reported in broad age categories were then disaggregated into age-specific estimates of seroprevalence, better accounting for higher seroprevalence among adults over 40 years of age.
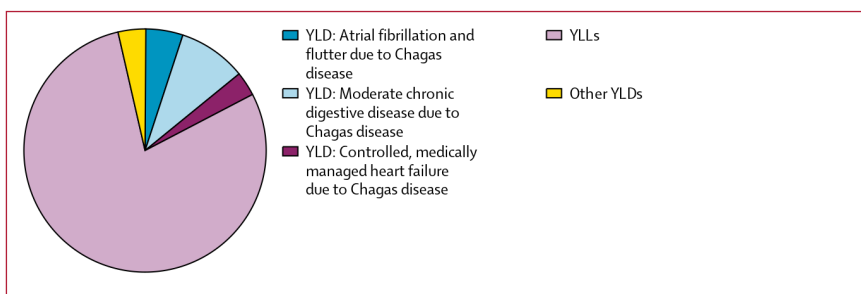
	Prevalence		Incidence		Deaths		YLLs		YLDs		DALYs	
	Number (millions)	Rate (per 100 000)	Number (millions)	Rate (per 100 000)	Number (millions)	Rate (per 100 000)	Number (millions)	Rate (per 100 000)	Number (millions)	Rate (per 100 000)	Number (millions)	Rate (per 100 000)
2019												
Both Sexes	6·47 (5·66 to 7·37)	79·9 (69·9 to 91·0)	0·173 (0·152 to 0·196)	2·3 (2·0 to 2·6)	0·00949 (0·00550 to 0·0165)	0·1 (0·1 to 0·2)	0·217 (0·130 to 0·399)	2·6 (1·6 to 4·8)	0·0579 (0·0377 to 0·0834)	0·7 (0·5 to 1·0)	0·275 (0·184 to 0·459)	3·3 (2·2 to 5·6)
Females	3·16 (2·78 to 3·58)	77·2 (67·8 to 87·7)	0·0839 (0·0739 to 0·0949)	2·2 (2·0 to 2·5)	0·00413 (0·00181 to 0·00851)	0·1 (0·0 to 0·2)	0·0866 (0·0379 to 0·186)	2·0 (0·9 to 4·3)	0·0249 (0·0161 to 0·0357)	0·6 (0·4 to 0·8)	0·112 (0·0635 to 0·211)	2·6 (1·5 to 4·9)
Males	3·30 (2·89 to 3·80)	82·5 (72·2 to 94·7)	0·0890 (0·0782 to 0·101)	2·3 (2·0 to 2·6)	0·00536 (0·00246 to 0·0102)	0·1 (0·1 to 0·3)	0·131 (0·0651 to 0·246)	3·3 (1·6 to 6·3)	0·0330 (0·0214 to 0·0475)	0·8 (0·5 to 1·2)	0·164 (0·0929 to 0·284)	4·2 (2·4 to 7·3)
Percentage change 2010-19												
Both Sexes	–2·9% (–5·4 to –0·4)	–15·8% (–17·8 to –13·8)	–7·1% (–9·9 to –4·5)	–14·0% (–16·2 to –11·9)	9·6% (–6·8 to 32·2)	–16·1% (–28·5 to 0·4)	4·4% (–12·8 to 29·5)	–16·9% (–30·5 to 3·2)	5·4% (2·1 to 8·6)	–12·6% (–15·2 to –10·1)	4·6% (–9·0 to 25·4)	–16·0% (–26·9 to 0·7)
Females	–3·7% (–6·4 to –1·2)	–16·9% (–19·2 to –14·8)	–7·2% (–10·5 to –4·5)	–14·7% (–17·2 to –12·4)	10·4% (–5·8 to 32·0)	–15·5% (–27·7 to 0·7)	5·7% (–10·7 to 29·4)	–16·4% (–29·4 to 3·0)	3·6% (–0·7 to 7·5)	–14·1% (–17·4 to –10·9)	5·2% (–7·3 to 24·6)	–15·8% (–26·2 to –0·2)
Males	–2·2% (–5·0 to 0·7)	–14·8% (–17·1 to –12·3)	–6·9% (–9·9 to –4·0)	–13·3% (–15·9 to –10·8)	9·1% (–10·2 to 34·1)	–17·1% (–31·0 to 0·7)	3·6% (–15·4 to 30·9)	–17·3% (–32·5 to 4·0)	6·8% (3·0 to 10·8)	–11·9% (–14·9 to –8·9)	4·2% (–11·5 to 26·7)	–16·3% (–28·6 to 1·3)

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 combined, females, and males, 2019, with percentage change between 2010 and 2019

	Deaths	YLLs	YLDs	DALYs
1990	120th	123rd	139th	160th
2010	119th	125th	146th	162nd
2019	116th	123rd	146th	161st

Table 3: Rank among Level 3 causes for global deaths, YLLs, YLDs, and DALYs in 1990, 2010, and 2019, for both sexes combined

- YLD: Atrial fibrillation and flutter due to Chagas disease
- YLD: Moderate chronic digestive disease due to Chagas disease
- YLD: Controlled, medically managed heart failure due to Chagas disease
- YLLs
- Other YLDs

Figure 1: Composition of DALYs by YLLs and constituent sequelae YLDs for both sexes combined, 2019
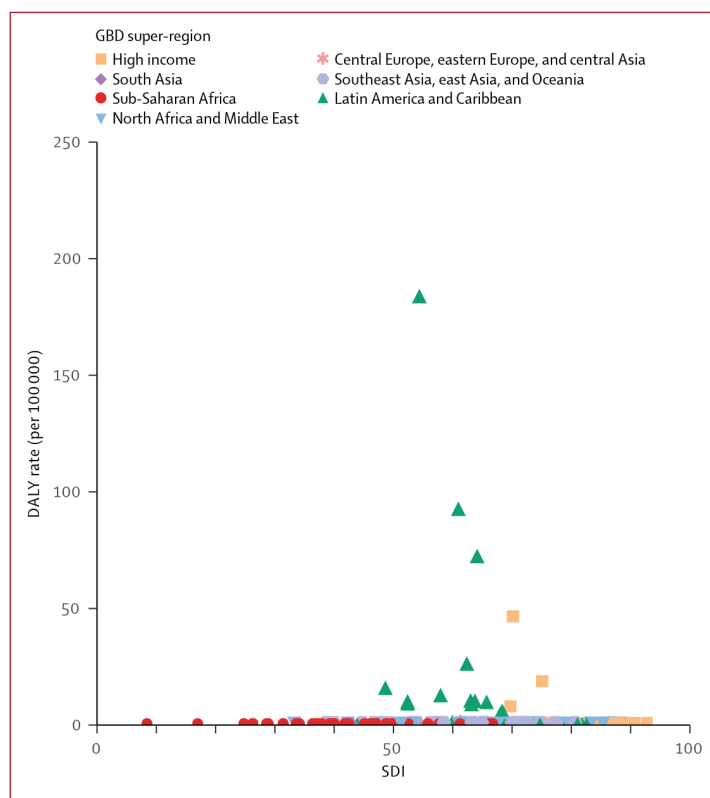
Figure 2: Age-standardised DALY rates for each location by SDI, both sexes combined, 2019
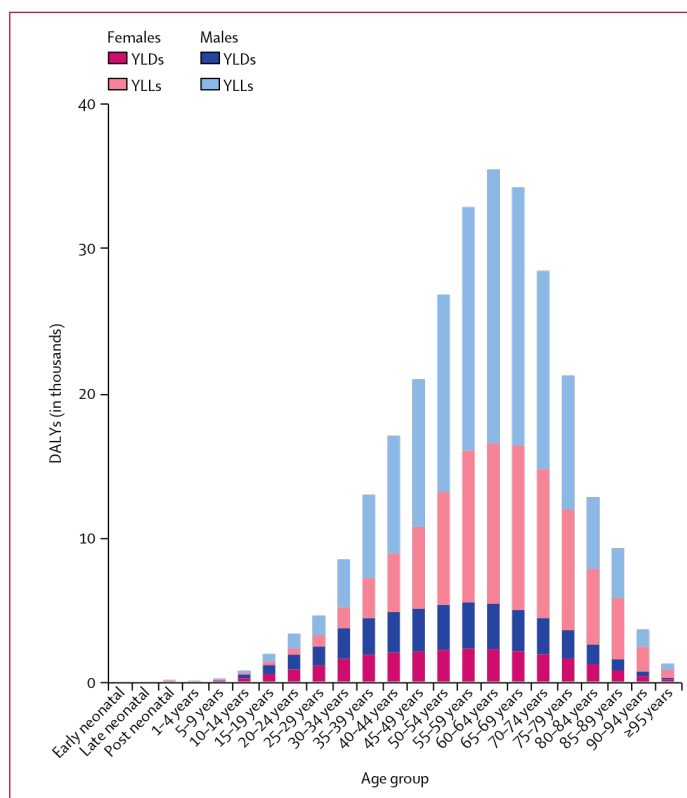

Figure 3: Composition of DALYs by YLLs and YLDs, age group, and sex, 2019
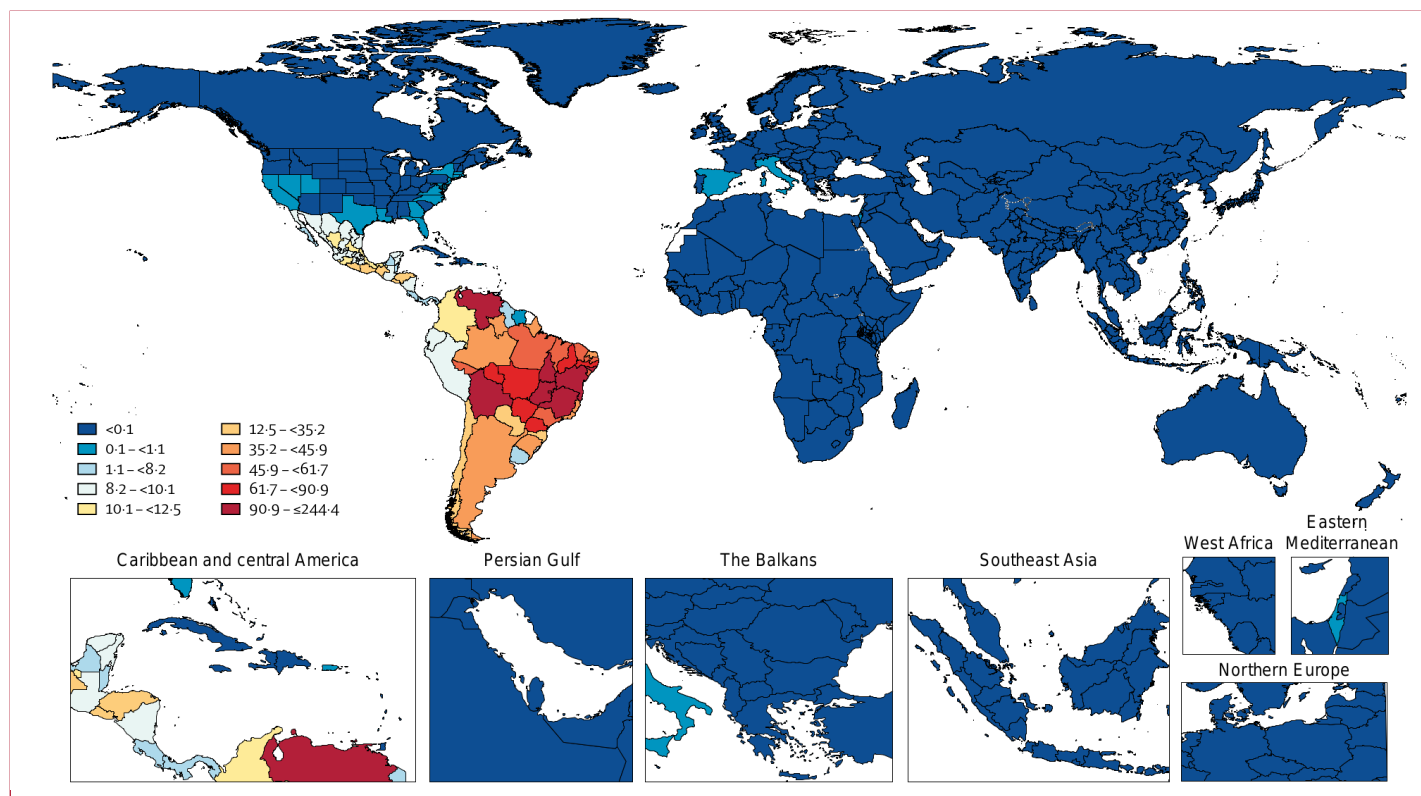

Figure 4: Age-standardised DALY rates (per 100 000) by location, both sexes combined, 2019