

Diet low in fibre—Level 3 risk

Summary In 2019, a diet low in fibre was responsible for 15·3 million (95% UI 9·11–22·0) DALYs and 606 000 deaths (342 000–887 000). It was the sixth-leading dietary risk factor for attributable DALYs.

Definition Diet low in fibre is defined as average daily consumption (in grams per day) of less than 21–22 grams of fibre from all sources including fruits, vegetables, grains, legumes, and pulses.

Total sources

Exposure	155
Relative risk	64

Table 1: Total sources used in GBD 2019 estimation

What is new in GBD 2019?

- The method of bias adjustment for non-dietary recall surveys was updated using MR-BRT, generally increasing estimates of fibre intake.
- After evaluating the most recent epidemiological evidence, we found sufficient evidence supporting the causal relationship of fibre intake with haemorrhagic stroke, ischaemic stroke, and diabetes and added these outcomes.
- We updated the dose–response curve of relative risk for fibre and all of its outcomes based on the most recent epidemiological evidence and a newly developed method for characterising the risk curve.
- The fibre TMREL changed from 19–28 to 21–22 grams/day.

	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)
2019								
Both sexes	0·606 (0·342 to 0·887)	7·7 (4·4 to 11·3)	13·5 (7·76 to 19·7)	164·8 (94·9 to 240·6)	1·82 (0·964 to 2·83)	22·1 (11·7 to 34·3)	15·3 (9·11 to 22·0)	186·9 (111·1 to 268·4)
Females	0·281 (0·157 to 0·410)	6·4 (3·6 to 9·4)	5·39 (3·11 to 7·81)	124·8 (72·0 to 180·9)	0·950 (0·502 to 1·47)	22·1 (11·6 to 34·3)	6·34 (3·73 to 9·02)	146·9 (86·6 to 208·5)
Males	0·325 (0·187 to 0·479)	9·2 (5·3 to 13·5)	8·09 (4·66 to 11·8)	206·8 (118·9 to 301·7)	0·869 (0·467 to 1·35)	22·0 (11·9 to 34·1)	8·95 (5·28 to 12·9)	228·9 (135·6 to 330·3)
Percentage change 2010–19								
Both sexes	3·1% (–2·9 to 8·9)	–20·7% (–25·1 to –16·4)	–2·1% (–8·2 to 3·9)	–21·3% (–26·2 to –16·6)	18·9% (12·9 to 24·8)	–4·3% (–8·6 to 0·0)	0·0% (–6·2 to 6·2)	–19·6% (–24·4 to –14·8)
Females	4·4% (–2·8 to 12·2)	–20·5% (–25·7 to –14·6)	–0·5% (–8·7 to 7·8)	–20·9% (–27·3 to –14·3)	17·9% (11·7 to 24·4)	–5·0% (–9·6 to –0·1)	1·9% (–5·8 to 10·1)	–18·9% (–24·9 to –12·3)
Males	1·9% (–5·3 to 9·4)	–20·8% (–26·2 to –15·3)	–3·1% (–10·6 to 4·8)	–21·5% (–27·4 to –15·5)	20·0% (12·6 to 26·9)	–3·5% (–8·7 to 1·5)	–1·3% (–8·6 to 6·1)	–20·1% (–25·8 to –14·2)

Numbers in parentheses are 95% uncertainty intervals.

Table 2: Attributable global 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	23rd	27th	33rd	29th
2010	24th	26th	34th	27th
2019	25th	26th	33rd	29th

Table 3: Rank among attributable Level 3 risks plus most detailed Level 2 risks of global deaths, YLLs, YLDs, and DALYs in 1990, 2010, and 2019 for both sexes combined

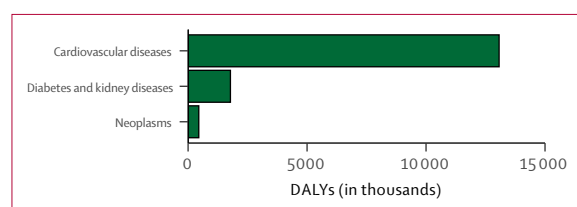


Figure 1: Composition of attributable global DALYs by constituent Level 2 causes for both sexes combined, 2019

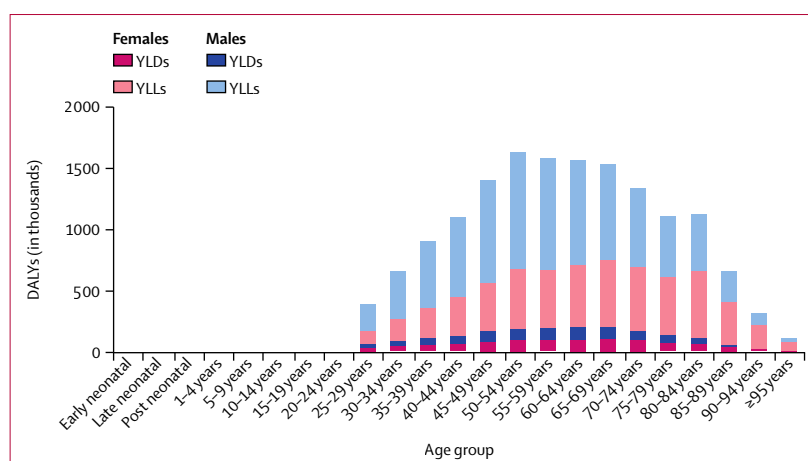


Figure 2: Composition of attributable global DALYs by YLLs and YLDs, age group, and sex, 2019

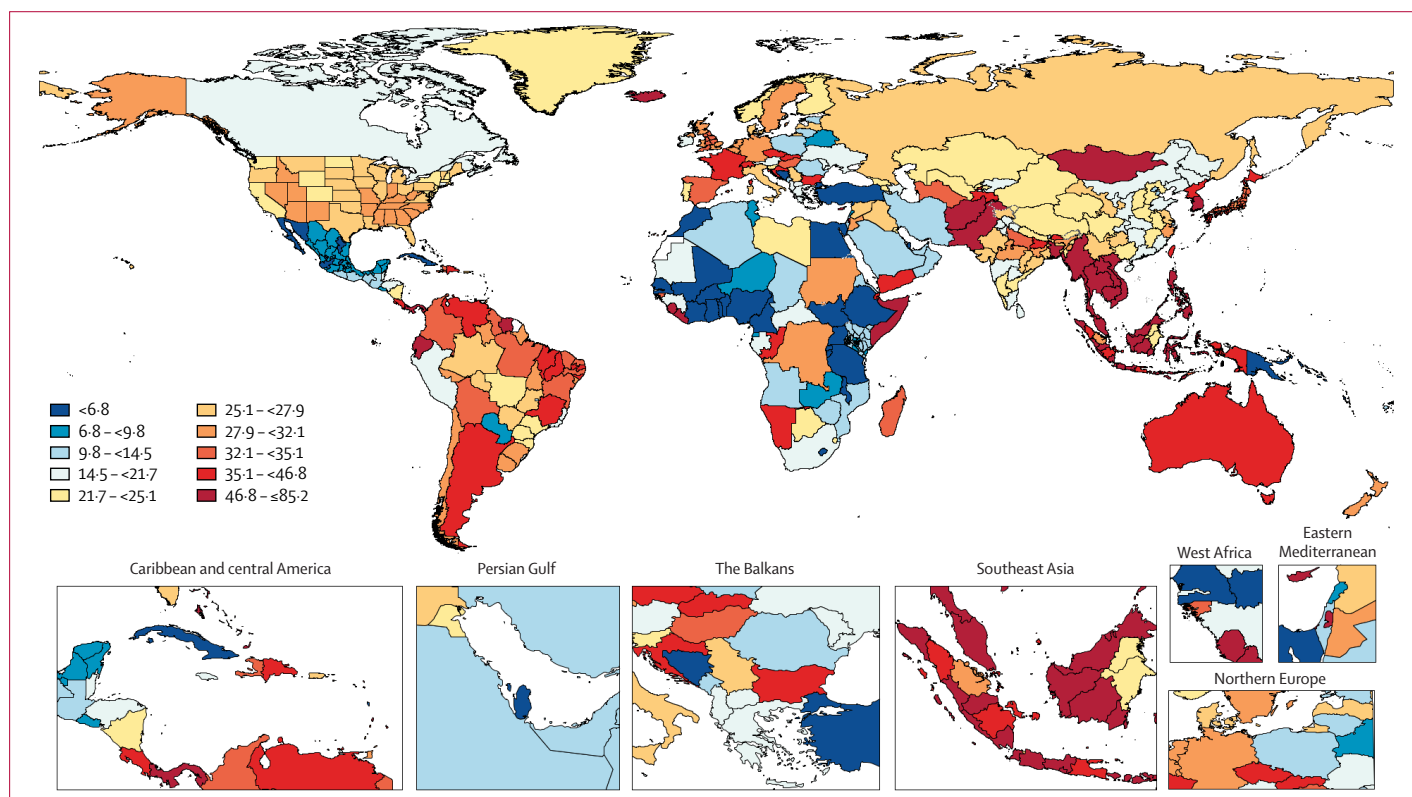


Figure 3: Age-standardised all-cause SEV by location, both sexes combined, 2019

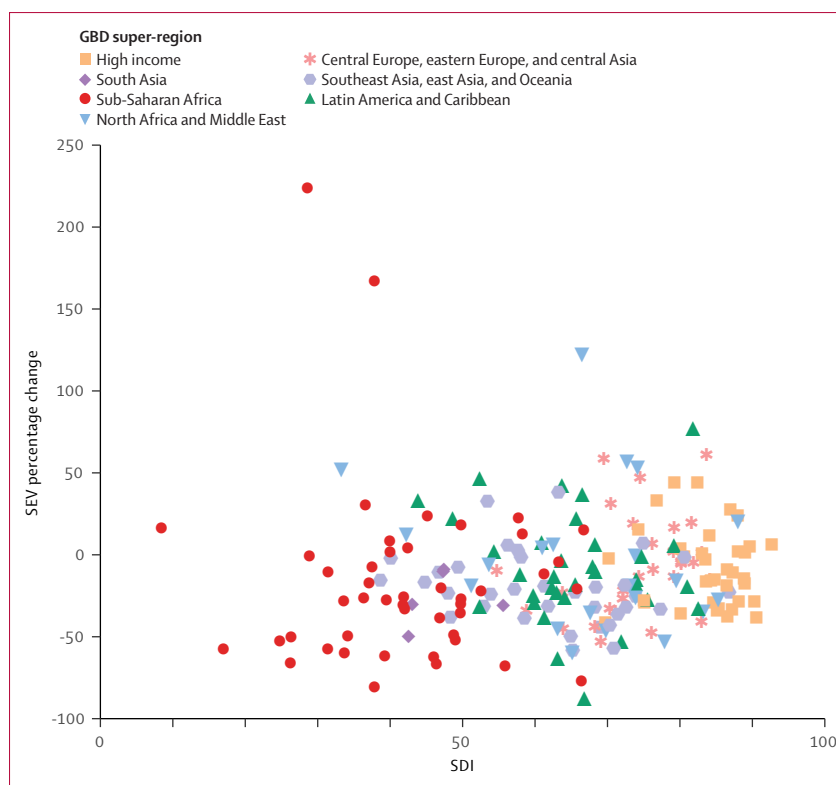


Figure 4: Percentage change in all-cause age-standardised SEV by SDI, both sexes combined, 1990–2019

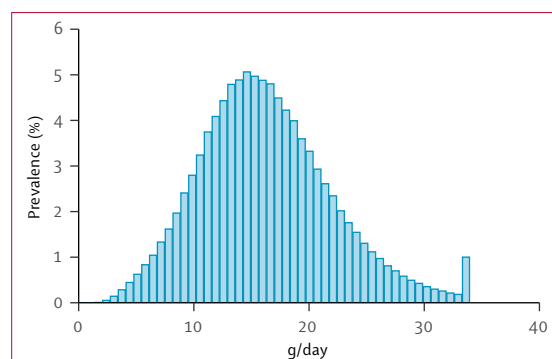


Figure 5: Percentage of population exposed to risk factor, both sexes combined, 2019

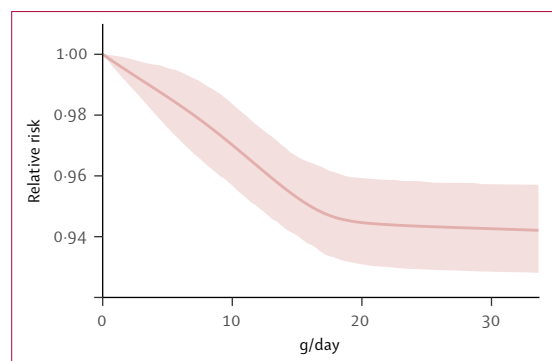


Figure 6: All-cause mortality relative risk, both sexes combined, 2019