Diet low in vegetables—Level 3 risk

Summary In 2019, diet low in vegetables was responsible for 13·0 million (95% UI 8·25–17·5) DALYs and 529 000 deaths (340 000–718 000). It was the ninth-leading dietary risk factor for attributable DALYs.

Definition Diet low in vegetables is defined as average consumption (in grams per day) of less than 280–320 g of vegetables, including fresh, frozen, cooked, canned, or dried vegetables and excluding legumes, salted or pickled vegetables, juices, nuts and seeds, and starchy vegetables (eg, potatoes).

	Total sources
Exposure	871
Relative risk	39

Table 1: Total sources used in GBD 2019 estimation

What is new in GBD 2019?

- To better characterise the dietary intake of vegetables at the country level, we used data from FAO supply utilisation accounts in place of data from food balance sheets.
- The method of bias adjustment for non-dietary recall surveys was updated using MR-BRT, generally increasing estimates of vegetable intake.
- We updated the dose–response curve of relative risk for vegetables and its outcomes based on the most recent epidemiological evidence and a newly developed method for characterising the risk curve.
- The TMREL changed from 290–430 to 280–320 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	0·529 (0·340 to 0·718)	6·7 (4·3 to 9·0)	12·4 (7·80 to 16·6)	150·0 (94·7 to 202·1)	0·601 (0·320 to 0·935)	7·3 (3·9 to 11·3)	13·0 (8·25 to 17·5)	157·3 (100·1 to 212·3)
Females	0·234 (0·150 to 0·318)	5·4 (3·4 to 7·3)	4·86 (3·07 to 6·69)	112·5 (71·0 to 154·9)	0·316 (0·162 to 0·502)	7·4 (3·8 to 11·7)	5·18 (3·25 to 7·10)	119·8 (75·2 to 164·4)
Males	0·295 (0·188 to 0·397)	8·2 (5·2 to 11·1)	7·49 (4·69 to 10·1)	189·9 (119·7 to 256·2)	0·286 (0·158 to 0·438)	7·3 (4·1 to 11·1)	7·78 (4·94 to 10·5)	197·2 (126·1 to 266·0)
Percentage change 2010–19								
Both sexes	14·2% (7·4 to 20·9)	−12·4% (−17·4 to −7·6)	10·9% (3·5 to 18·5)	−11·4% (−17·3 to −5·4)	22·2% (20·0 to 24·7)	−1·6% (−3·3 to 0·1)	11·4% (4·1 to 18·7)	−11·0% (−16·6 to −5·2)
Females	16·7% (8·4 to 25·1)	−10·8% (−17·1 to −4·4)	14·4% (4·8 to 24·3)	−9·1% (−16·8 to −1·2)	22·4% (20·1 to 25·1)	−0·9% (−3·1 to 1·1)	14·9% (5·6 to 24·3)	−8·7% (−16·0 to −1·2)
Males	12·2% (4·2 to 20·8)	−13·7% (−19·5 to −7·6)	8·7% (−0·1 to 18·1)	−12·8% (−19·6 to −5·5)	22·0% (19·5 to 24·9)	−2·5% (−4·2 to −0·9)	9·1% (0·6 to 18·2)	−12·5% (−19·0 to −5·4)

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	24th	28th	36th	30th
2010	28th	30th	39th	34th
2019	27th	30th	39th	33rd

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

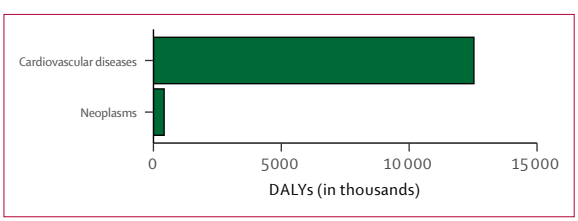

Figure 1: Composition of attributable global DALYs by constituent Level 2 causes for both sexes combined, 2019

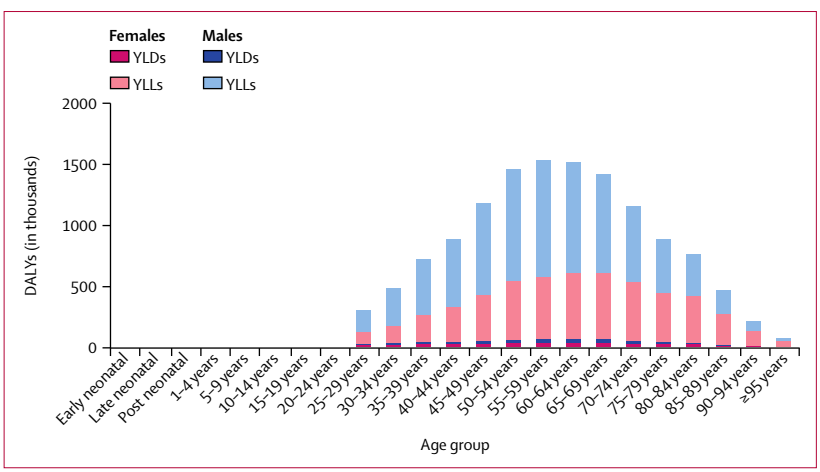

Figure 2: Composition of attributable global DALYs by YLLs and YLDs, age group, and sex, 2019

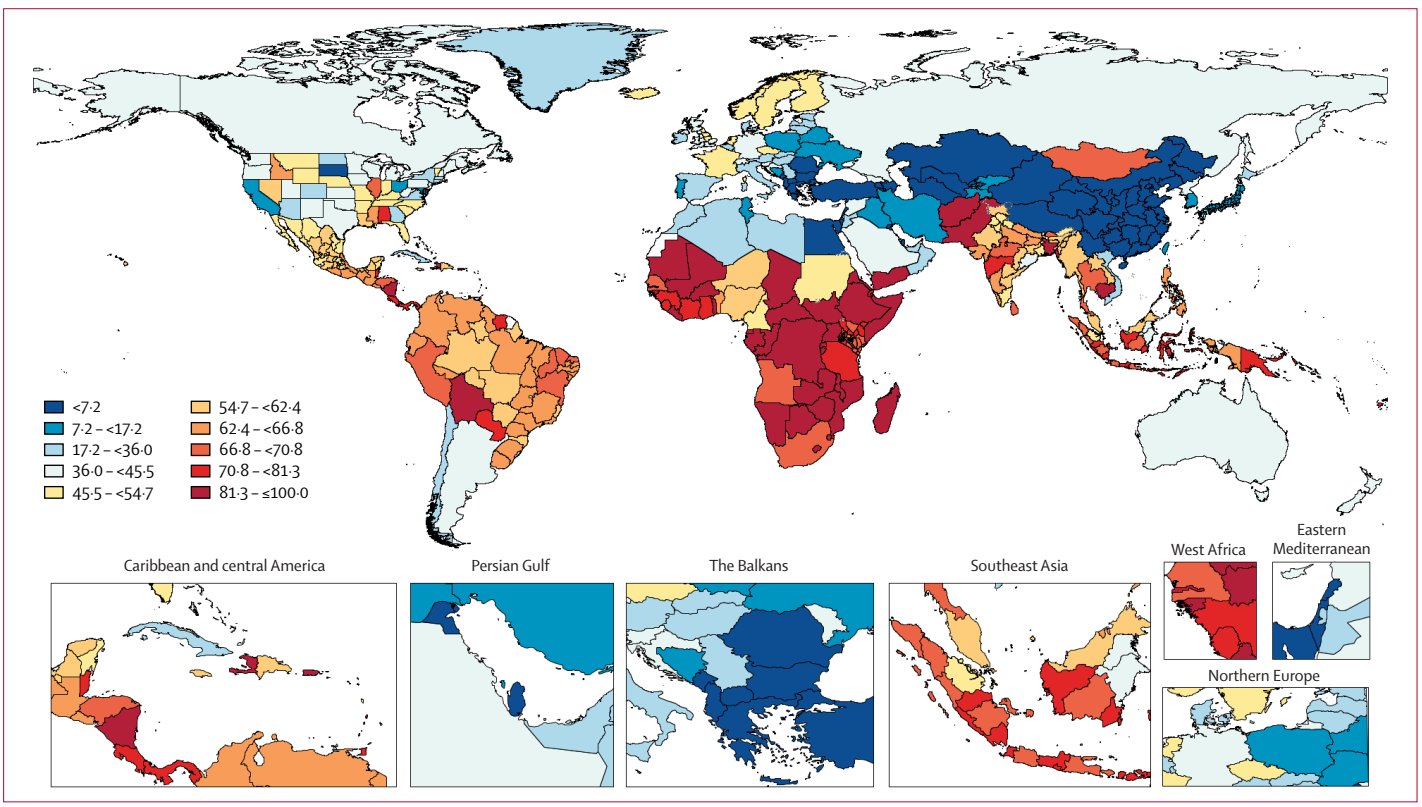

Figure 3: **Age-standardised all-cause SEV by location, both sexes combined, 2019**

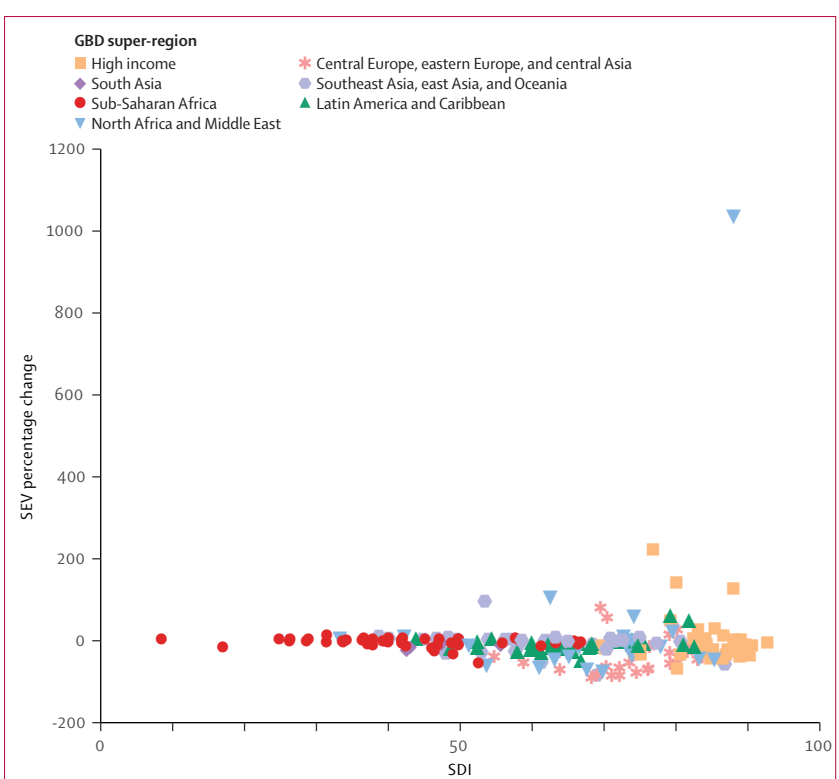

Figure 4: **Percentage change in all-cause age-standardised SEV by SDI, both sexes combined, 1990–2019**

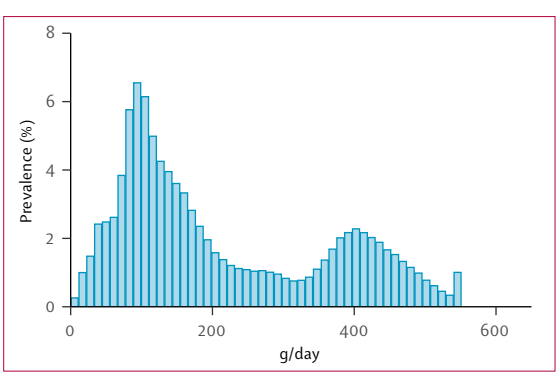

Figure 5: **Percentage of population exposed to risk factor, both sexes combined, 2019**

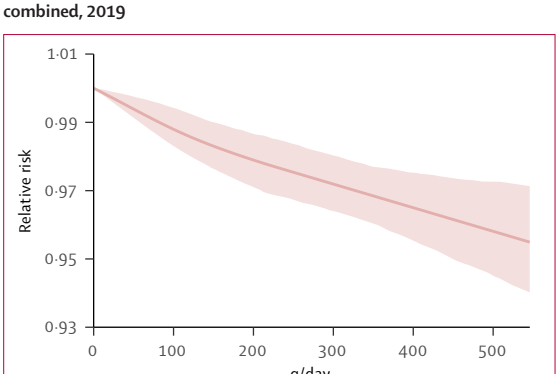

Figure 6: **All-cause mortality relative risk, both sexes combined, 2019**