Diet low in nuts and seeds—Level 3 risk

Summary In 2019, a diet low in nuts and seeds was responsible for 13·6 million (95% UI 7·76–18·6) DALYs and 575 000 deaths (311 000–790 000). It was the eighth-leading dietary risk factor for attributable DALYs.

Definition Diet low in nuts and seeds is defined as average daily consumption (in grams per day) of less than 10–19 grams of nuts and seeds, including tree nuts and seeds and peanuts.

	Total sources
Exposure	100
Relative risk	23

Table 1: Total sources used in GBD 2019 estimation

What is new in GBD 2019?

- To better characterise the dietary intake of nuts and seeds 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 nuts and seeds intake.
- We updated the dose–response curve of relative risk for nuts and ischaemic heart disease and diabetes based on the most recent epidemiological evidence and a newly developed method for characterising the risk curve.
- The nuts and seeds TMREL changed from 16–25 to 10–19 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	0·575 (0·311 to 0·790)	7·3 (4·0 to 10·1)	12·6 (6·92 to 17·2)	153·7 (84·4 to 210·0)	1·01 (0·382 to 1·79)	12·2 (4·7 to 21·6)	13·6 (7·76 to 18·6)	166·0 (94·9 to 227·5)
Females	0·251 (0·134 to 0·349)	5·7 (3·1 to 8·0)	4·69 (2·59 to 6·45)	108·1 (59·7 to 148·7)	0·480 (0·181 to 0·851)	11·1 (4·2 to 19·7)	5·17 (2·92 to 7·10)	119·2 (67·2 to 163·9)
Males	0·324 (0·180 to 0·448)	9·2 (5·1 to 12·7)	7·90 (4·38 to 10·9)	202·2 (112·5 to 279·2)	0·530 (0·202 to 0·934)	13·5 (5·2 to 23·8)	8·43 (4·78 to 11·6)	215·8 (122·5 to 298·9)
Percentage change 2010–19								
Both sexes	9·9% (2·6 to 17·3)	–15·6% (–20·9 to –10·2)	5·7% (–2·0 to 14·1)	–15·6% (–21·6 to –9·1)	33·3% (28·0 to 39·3)	5·5% (1·0 to 10·2)	7·4% (–0·3 to 15·6)	–14·4% (–20·3 to –8·0)
Females	12·1% (3·2 to 21·2)	–14·8% (–21·5 to –7·8)	9·5% (–0·9 to 20·7)	–13·6% (–21·8 to –4·7)	32·2% (26·7 to 38·2)	4·8% (0·3 to 9·8)	11·3% (1·3 to 21·8)	–12·2% (–20·1 to –3·7)
Males	8·3% (–0·4 to 17·8)	–16·1% (–22·4 to –9·3)	3·6% (–5·8 to 14·0)	–16·7% (–23·9 to –8·8)	34·4% (28·0 to 41·1)	6·0% (0·6 to 11·1)	5·1% (–4·0 to 15·1)	–15·5% (–22·6 to –7·9)

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	29th	30th	38th	33rd
2010	26th	29th	36th	32nd
2019	26th	29th	36th	31st

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
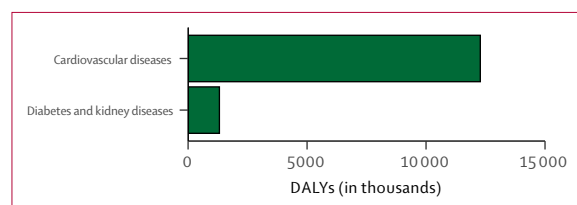

Figure 1: Composition of attributable global DALYs by constituent Level 2 causes for both sexes combined, 2019
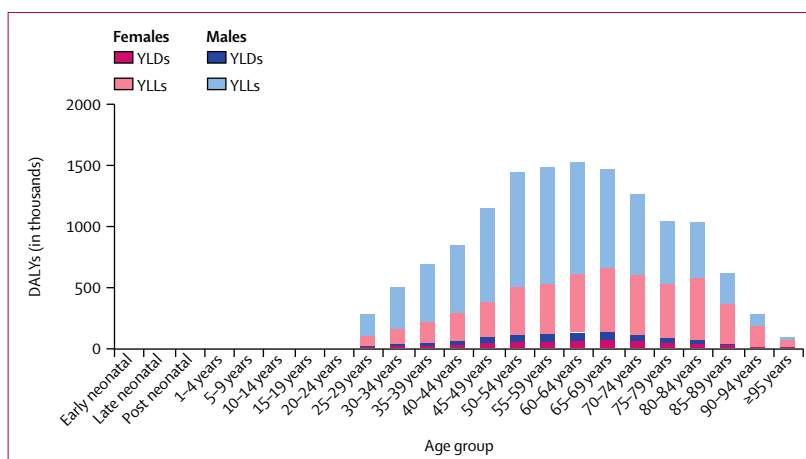

Figure 2: Composition of attributable global DALYs by YLLs and YLDs, age group, and sex, 2019
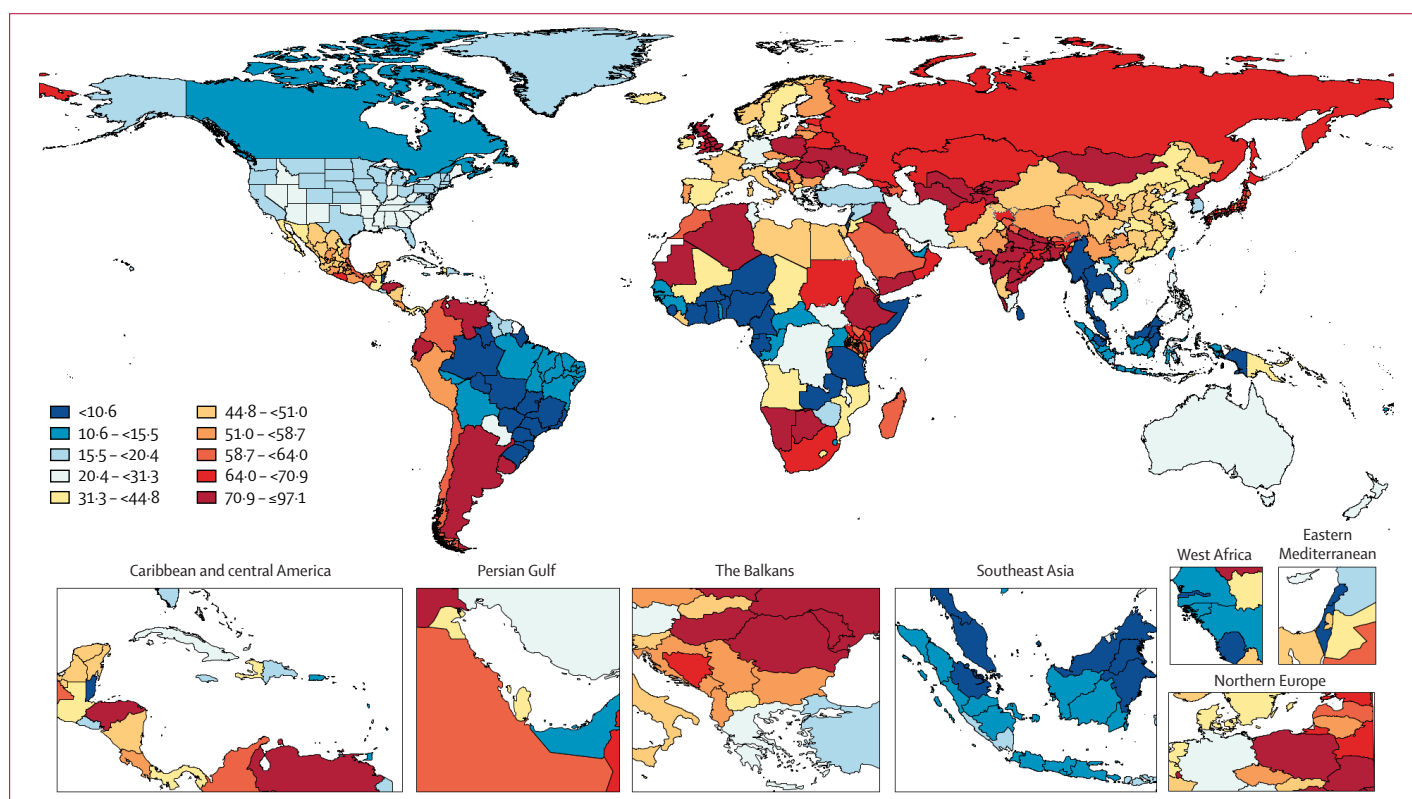
Figure 3: Age-standardised all-cause SEV by location, both sexes combined, 2019
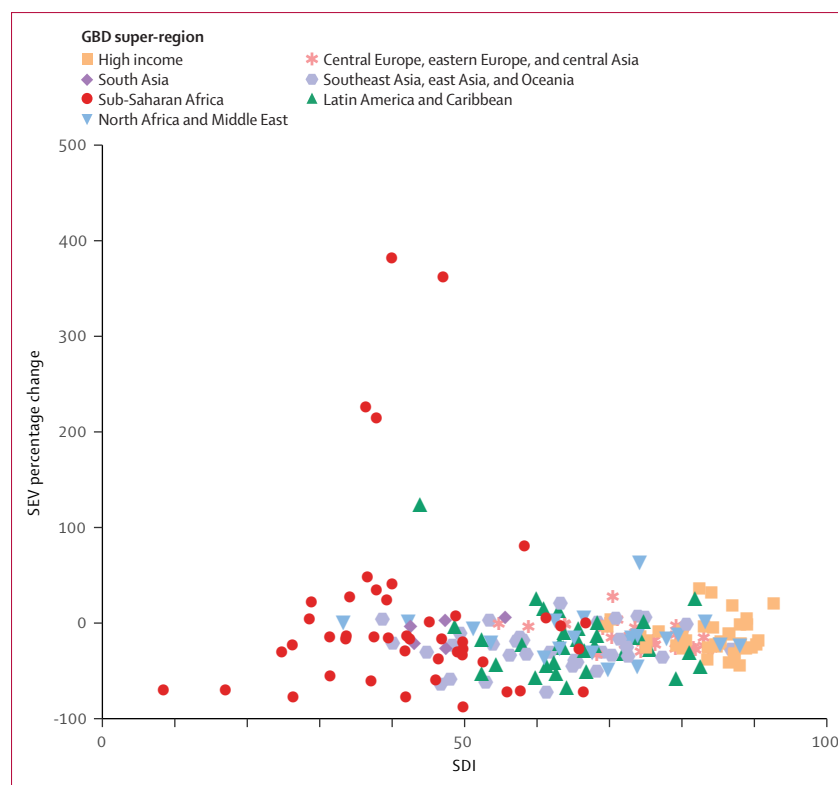

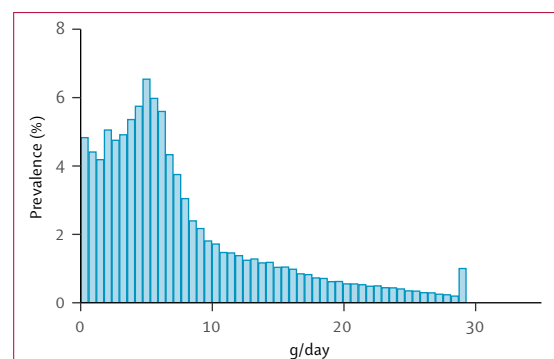*Figure 4:* Percentage change in all-cause age-standardised SEV by SDI, both sexes combined, 1990–2019

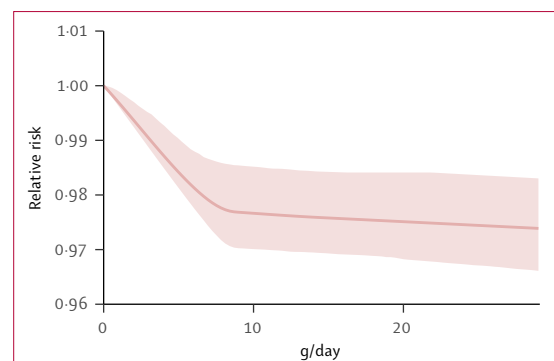*Figure 5:* Percentage of population exposed to risk factor, both sexes combined, 2019

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