Diet low in polyunsaturated fatty acids—Level 3 risk

Summary In 2019, diet low in polyunsaturated fatty acids (PUFA) was responsible for 8·01 million (95% UI 0·97–16·2) DALYs and 346 000 deaths (44 200–707 000). It was the 11th-leading dietary risk factor for attributable DALYs.

Definition Diet low in PUFA is defined as average daily consumption (in percentage daily energy) of less than 7–9% total energy intake from PUFAs.

	Total sources
Exposure	70
Relative risk	18

Table 1: Total sources used in GBD 2019 estimation

What is new in GBD 2019?

- To better characterise the dietary intake of PUFA 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 decreasing estimates of PUFA intake.
- We updated the dose–response curve of relative risk for PUFA and ischaemic heart disease based on the most recent epidemiological evidence and a newly developed method for characterising the risk curve.
- The PUFA TMREL changed from 9–13% to 7–9% daily energy.

	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	0·346 (0·0442 to 0·707)	4·4 (0·6 to 9·0)	7·80 (0·933 to 15·8)	95·0 (11·4 to 193·0)	0·214 (0·0258 to 0·480)	2·6 (0·3 to 5·9)	8·01 (0·969 to 16·2)	97·6 (11·9 to 198·0)
Females	0·152 (0·0202 to 0·310)	3·5 (0·5 to 7·1)	2·91 (0·370 to 5·96)	67·1 (8·5 to 137·4)	0·0989 (0·0118 to 0·222)	2·3 (0·3 to 5·1)	3·01 (0·385 to 6·17)	69·4 (8·9 to 142·4)
Males	0·194 (0·0241 to 0·397)	5·4 (0·7 to 11·0)	4·89 (0·569 to 10·0)	124·2 (14·7 to 253·5)	0·115 (0·0139 to 0·259)	3·0 (0·4 to 6·7)	5·00 (0·583 to 10·2)	127·1 (15·0 to 259·9)
Percentage change 2010–19								
Both sexes	15·8% (8·1 to 22·7)	−10·8% (−16·4 to −5·8)	10·9% (2·6 to 18·3)	−11·3% (−17·7 to −5·6)	25·2% (19·7 to 28·5)	−1·5% (−5·5 to 0·8)	11·2% (3·1 to 18·4)	−11·0% (−17·4 to −5·4)
Females	18·3% (8·7 to 27·0)	−9·8% (−17·0 to −3·5)	14·2% (3·5 to 23·8)	−9·7% (−18·4 to −2·1)	26·4% (20·6 to 29·9)	−0·7% (−5·0 to 1·7)	14·6% (4·2 to 23·9)	−9·4% (−17·8 to −2·1)
Males	13·8% (4·7 to 22·7)	−11·5% (−18·2 to −5·1)	9·0% (−0·4 to 18·1)	−12·1% (−19·4 to −5·1)	24·1% (18·4 to 27·8)	−2·4% (−6·5 to 0·0)	9·3% (0·0 to 18·3)	−11·9% (−19·0 to −5·0)

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	33rd	34th	43rd	38th
2010	34th	33rd	43rd	38th
2019	33rd	34th	42nd	38th

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

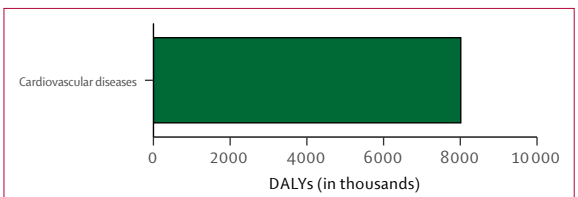

Figure 1: Composition of attributable global DALYs by constituent Level 2 causes for both sexes combined, 2019

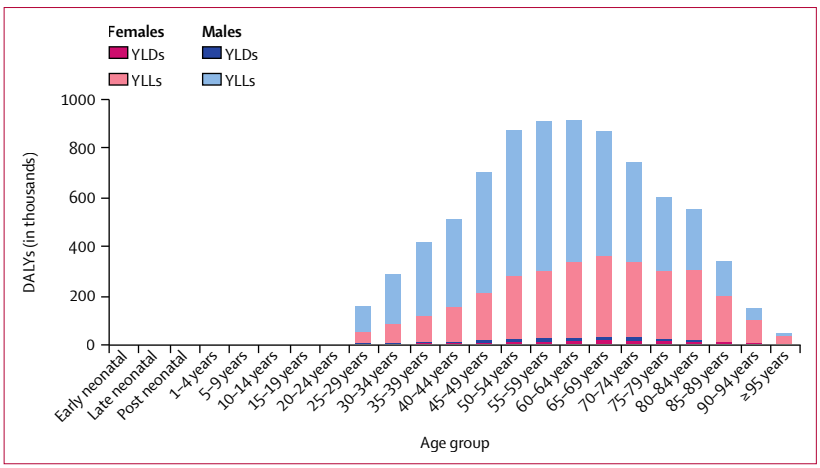

Figure 2: Composition of attributable global DALYs by YLLs and YLDs, age group, and sex, 2019

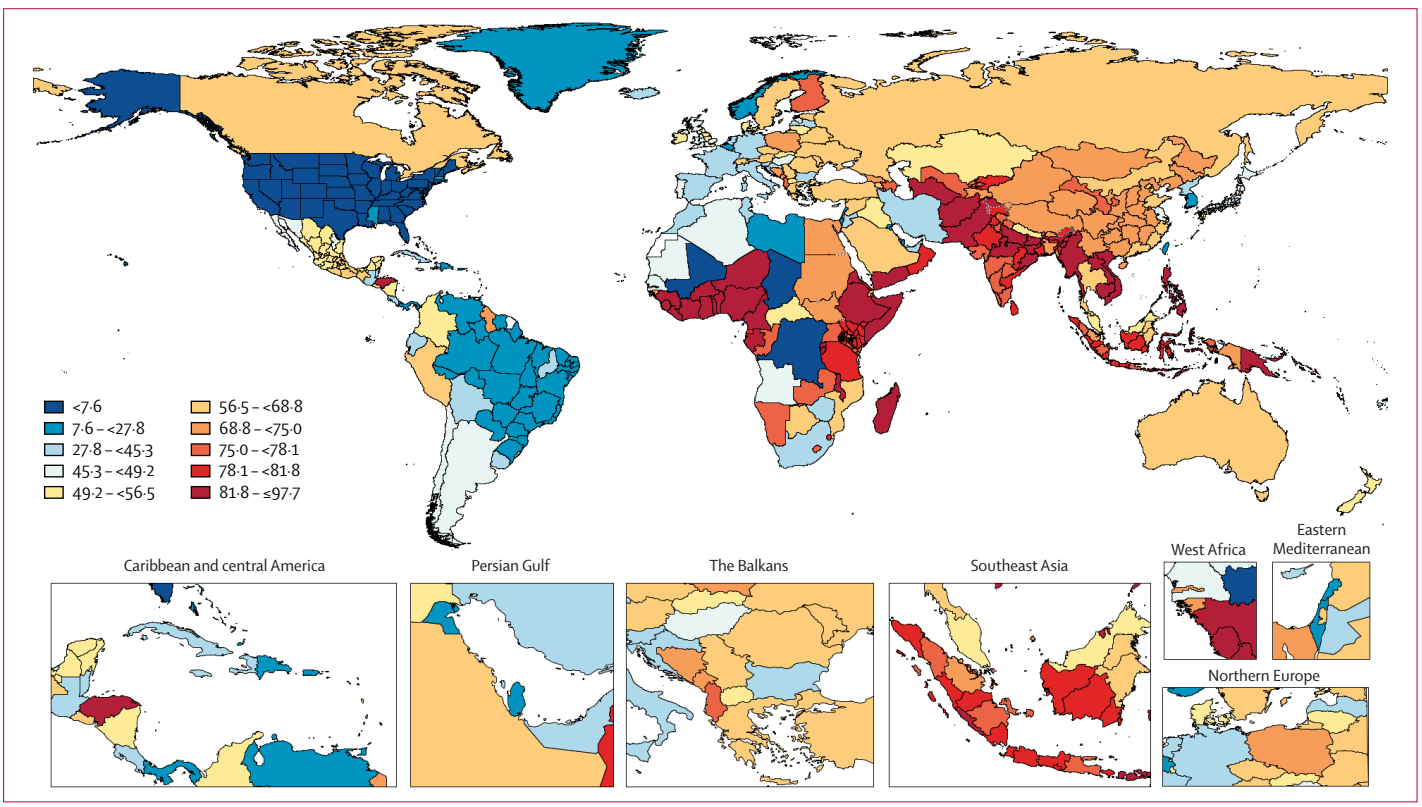

Figure 3: **Age-standardised all-cause SEV by location, both sexes combined, 2019**

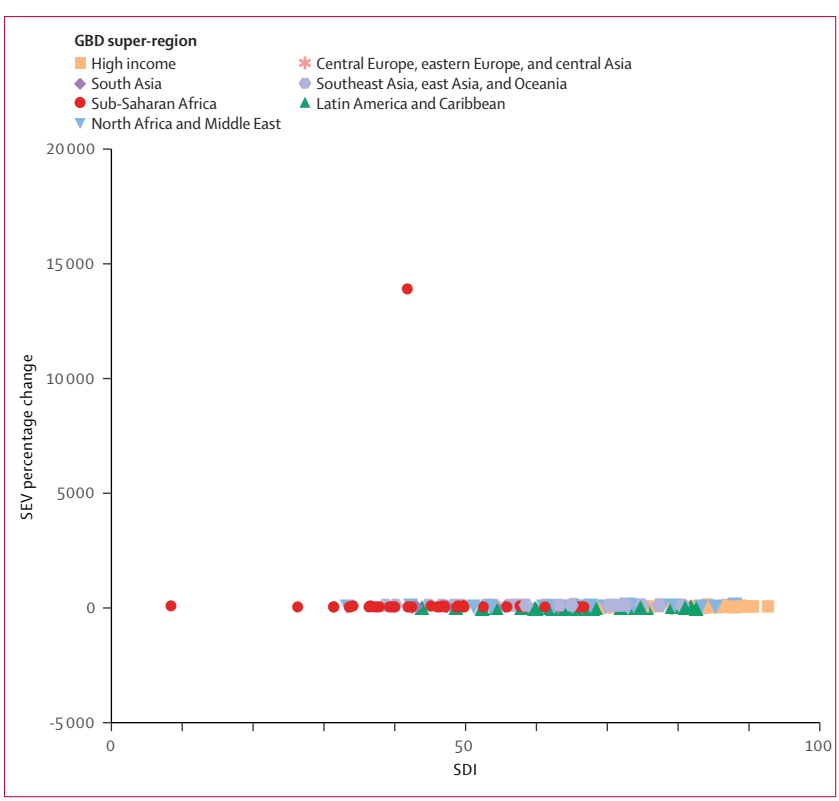

Figure 4: **Percentage change in all-cause age-standardised SEV by SDI, both sexes combined, 1990–2019**

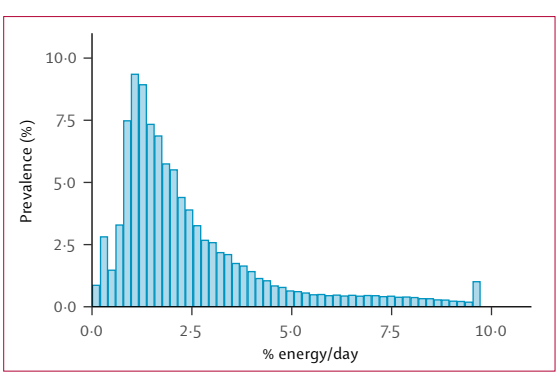

Figure 5: **Percentage of population exposed to risk factor, both sexes combined, 2019**

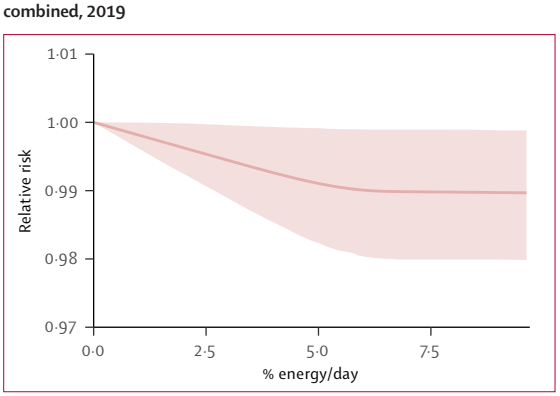

Figure 6: **All-cause mortality relative risk, both sexes combined, 2019**