Diet low in milk—Level 3 risk

Summary In 2019, a diet low in milk was responsible for 3·80 million (95% UI 2·46–5·12) DALYs and 166 000 deaths (107 000–226 000). It was the 14th-leading dietary risk factor for attributable DALYs.

Definition Diet low in milk is defined as average daily consumption (in grams per day) of less than 360–500 grams of milk including non-fat, low-fat, and full-fat milk, excluding soy milk and other plant derivatives.

	Total sources
Exposure	1148
Relative risk	12

Table 1: Total sources used in GBD 2019 estimation

What is new in GBD 2019?

- To better characterise the dietary intake of milk 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 milk intake.
- We updated the dose–response curve of relative risk for milk and colorectal cancer based on the most recent epidemiological evidence and a newly developed method for characterising the risk curve.
- The milk TMREL changed from 350–520 to 360–500 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	0·166 (0·107 to 0·226)	2·1 (1·3 to 2·8)	3·64 (2·35 to 4·90)	44·2 (28·6 to 59·5)	0·157 (0·0906 to 0·235)	1·9 (1·1 to 2·9)	3·80 (2·46 to 5·12)	46·1 (29·8 to 62·2)
Females	0·0744 (0·0469 to 0·100)	1·7 (1·1 to 2·3)	1·53 (0·976 to 2·05)	35·3 (22·5 to 47·2)	0·0641 (0·0366 to 0·0968)	1·5 (0·8 to 2·2)	1·60 (1·01 to 2·13)	36·8 (23·3 to 49·0)
Males	0·0921 (0·0593 to 0·126)	2·6 (1·6 to 3·5)	2·11 (1·37 to 2·88)	54·0 (35·0 to 73·9)	0·0932 (0·0542 to 0·141)	2·4 (1·4 to 3·7)	2·20 (1·43 to 3·01)	56·5 (36·6 to 77·2)
Percentage change 2010–19								
Both sexes	32·4% (24·5 to 41·0)	1·6% (–4·3 to 8·1)	28·2% (19·8 to 37·4)	1·4% (–5·3 to 8·7)	41·1% (30·6 to 53·2)	10·2% (2·1 to 19·6)	28·7% (20·5 to 37·7)	1·7% (–4·8 to 8·9)
Females	31·9% (22·2 to 42·1)	1·3% (–6·1 to 9·3)	28·2% (17·7 to 39·5)	1·4% (–6·8 to 10·4)	37·8% (25·8 to 51·2)	7·8% (–1·6 to 18·4)	28·6% (18·6 to 39·5)	1·7% (–6·3 to 10·4)
Males	32·8% (21·6 to 44·9)	1·8% (–6·3 to 10·6)	28·2% (16·1 to 41·2)	1·3% (–7·9 to 11·2)	43·5% (28·7 to 61·2)	11·7% (0·8 to 24·7)	28·7% (17·1 to 41·4)	1·7% (–7·2 to 11·3)

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	42nd	43rd	45th	48th
2010	41st	43rd	45th	47th
2019	39th	41st	45th	44th

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
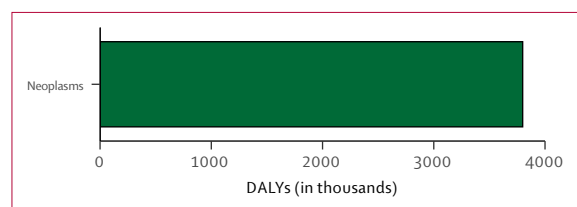
Figure 1: Composition of attributable global DALYs by constituent Level 2 causes for both sexes combined, 2019
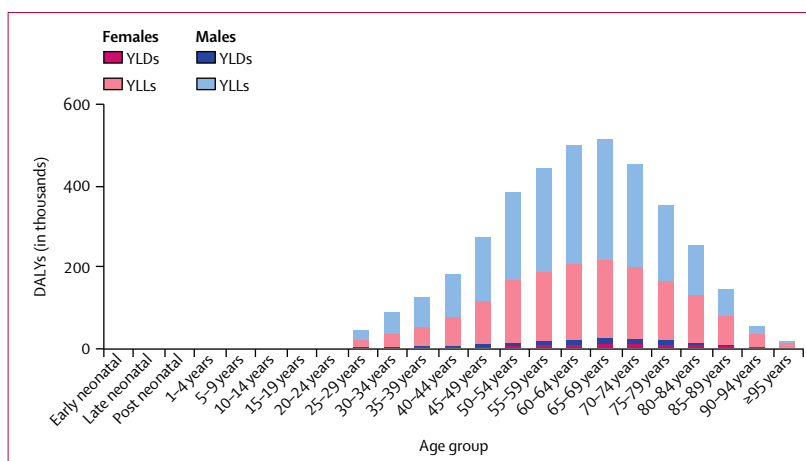
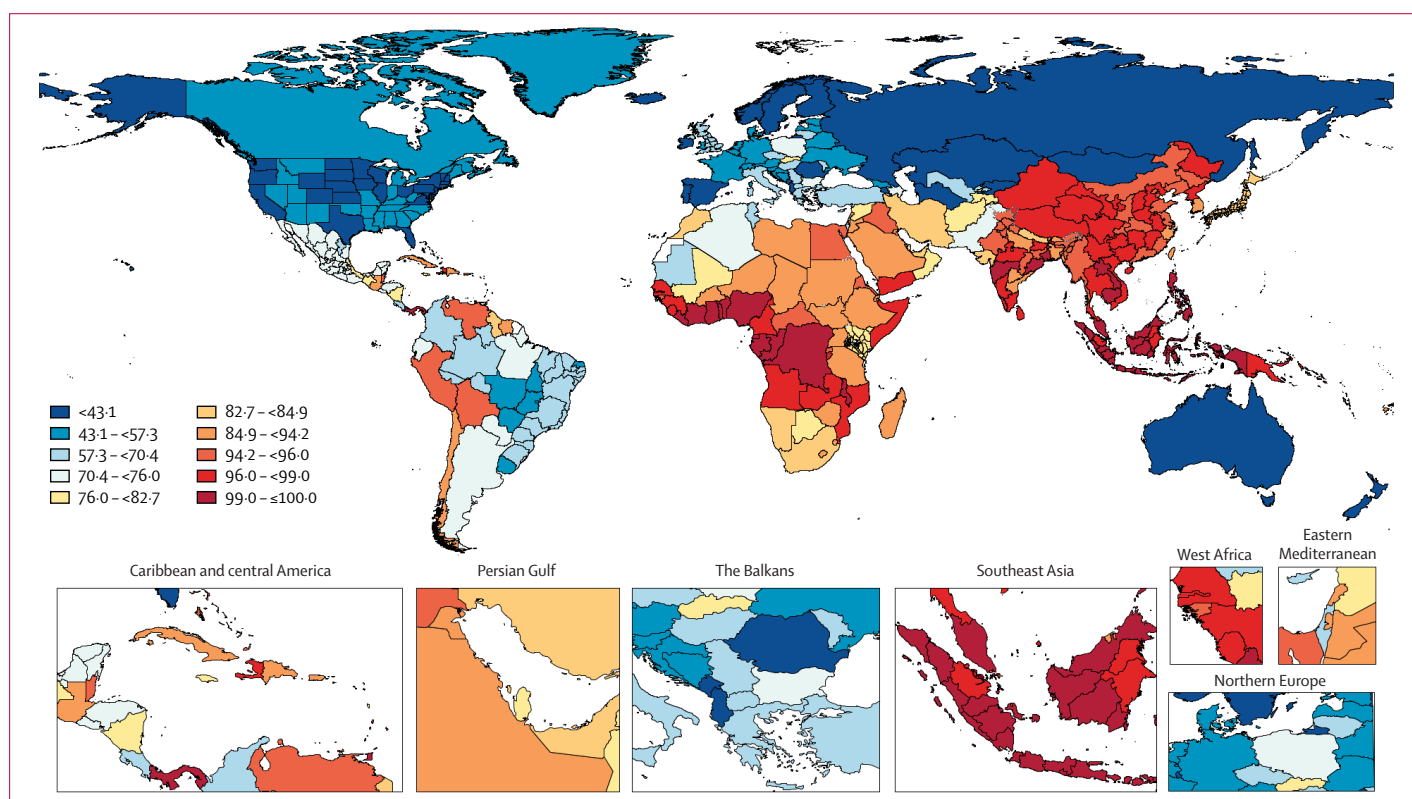*Figure 2:* Composition of attributable global DALYs by YLLs and YLDs, age group, and sex, 2019

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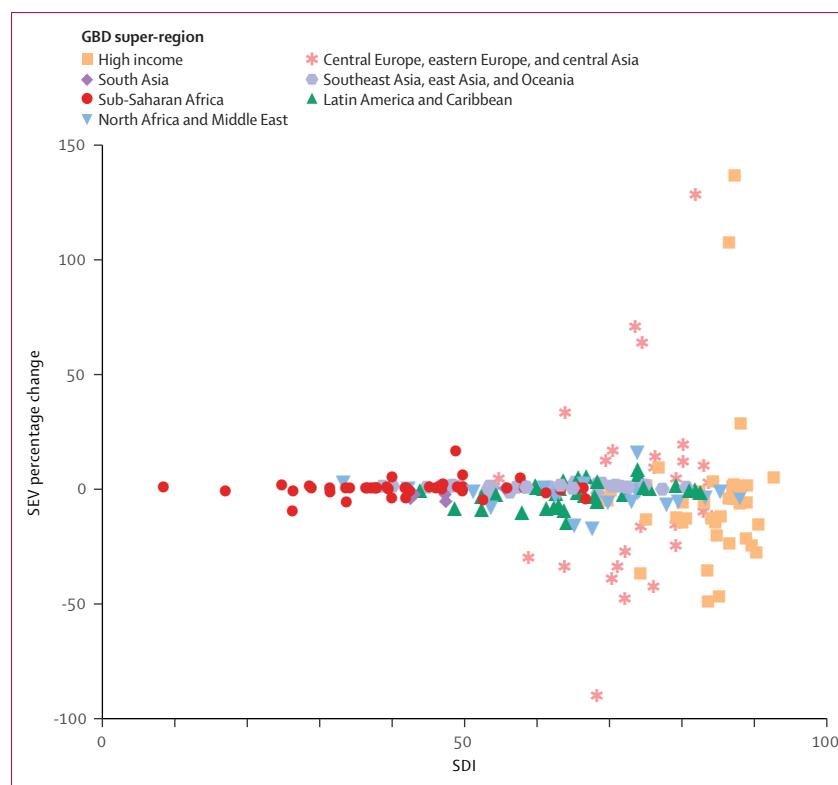

Figure 4: Percentage change in all-cause age-standardised SEV by SDI, both sexes combined, 1990–2019
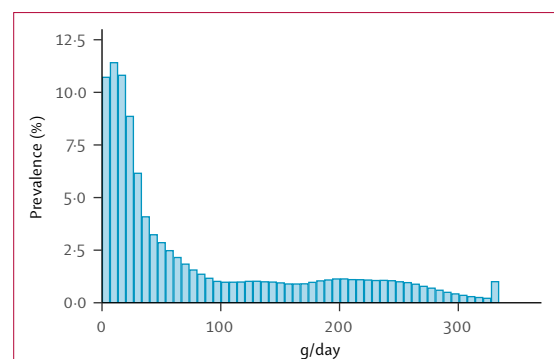

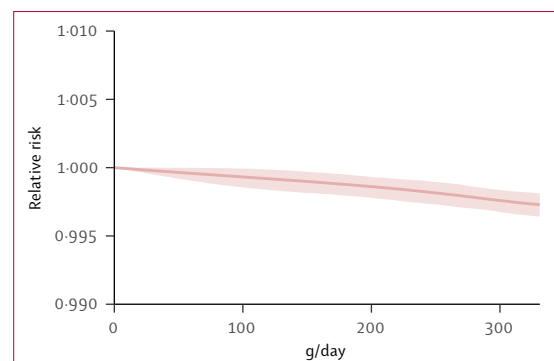*Figure 5:* Percentage of population exposed to risk factor, both sexes combined, 2019

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