

Diet low in fruit—Level 3 risk

Summary In 2019, diet low in fruit was responsible for 27·7 million (95% UI 20·2–35·9) DALYs and 1·05 million (0·730–1·36) deaths. It was the third-leading dietary risk factor for attributable DALYs.

Definition Diet low in fruit is defined as average daily consumption (in grams per day) of less than 310–340 grams of fruit including fresh, frozen, cooked, canned, or dried fruit, excluding fruit juices and salted or pickled fruits.

Total sources

| | |
|---------------|-----|
| Exposure | 869 |
| Relative risk | 116 |

Table 1: Total sources used in GBD 2019 estimation

What is new in GBD 2019?

- To better characterise the dietary intake of fruit at the country level, we used data from FAO supply utilisation accounts in place of data from food balance sheets.
- Bias adjustment for non-dietary recall surveys was updated using MR-BRT, generally increasing estimates of fruit intake.
- We found insufficient evidence supporting the causal relationship of fruit intake with four outcomes and removed these outcomes of low fruit intake.
- We updated the dose–response curve of relative risk for all outcomes based on the most recent epidemiological evidence and a newly developed method for characterising the risk curve.
- The TMREL changed from 200–300 to 310–340 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 | 1·05 (0·730 to 1·36) | 13·1 (9·1 to 17·1) | 24·2 (16·9 to 31·7) | 293·5 (204·1 to 384·3) | 3·46 (2·17 to 5·17) | 41·7 (26·2 to 62·5) | 27·7 (20·2 to 35·9) | 335·3 (244·4 to 434·9) |
| Females | 0·459 (0·317 to 0·602) | 10·5 (7·2 to 13·8) | 9·53 (6·67 to 12·5) | 220·0 (153·7 to 289·7) | 1·76 (1·10 to 2·67) | 41·0 (25·6 to 62·0) | 11·3 (8·26 to 14·6) | 261·0 (191·1 to 337·4) |
| Males | 0·587 (0·403 to 0·778) | 16·1 (11·0 to 21·4) | 14·7 (10·1 to 19·6) | 371·7 (255·7 to 495·1) | 1·70 (1·08 to 2·56) | 42·6 (27·0 to 64·0) | 16·4 (11·8 to 21·6) | 414·3 (297·8 to 545·5) |
| Percentage change 2010–19 | | | | | | | | |
| Both sexes | 10·1% (3·4 to 17·6) | –14·9% (–19·9 to –9·4) | 6·0% (–0·8 to 14·0) | –15·3% (–20·6 to –9·1) | 29·5% (24·9 to 34·4) | 4·2% (0·9 to 7·9) | 8·5% (1·8 to 15·8) | –13·3% (–18·5 to –7·5) |
| Females | 11·9% (2·9 to 20·7) | –14·1% (–21·0 to –7·2) | 8·4% (–1·2 to 18·5) | –14·0% (–21·5 to –6·0) | 27·7% (22·9 to 32·4) | 2·9% (–0·7 to 6·6) | 11·0% (2·5 to 19·6) | –11·7% (–18·6 to –5·0) |
| Males | 8·7% (–0·2 to 18·3) | –15·6% (–22·2 to –8·5) | 4·5% (–4·6 to 14·1) | –16·1% (–23·1 to –8·5) | 31·4% (26·3 to 36·8) | 5·7% (1·8 to 9·8) | 6·8% (–1·9 to 16·0) | –14·3% (–21·0 to –7·2) |

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 | 19th | 20th | 26th | 21st |
| 2010 | 19th | 19th | 27th | 20th |
| 2019 | 17th | 19th | 27th | 20th |

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

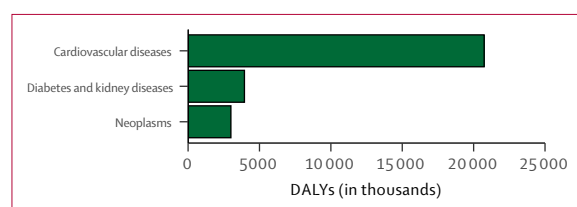


Figure 1: Composition of attributable global DALYs by constituent Level 2 causes for both sexes combined, 2019

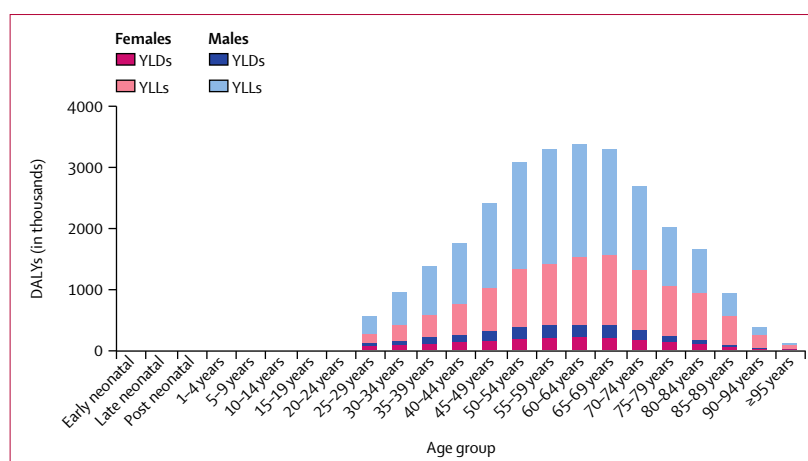


Figure 2: Composition of attributable global DALYs by YLLs and YLDs, age group, and sex, 2019

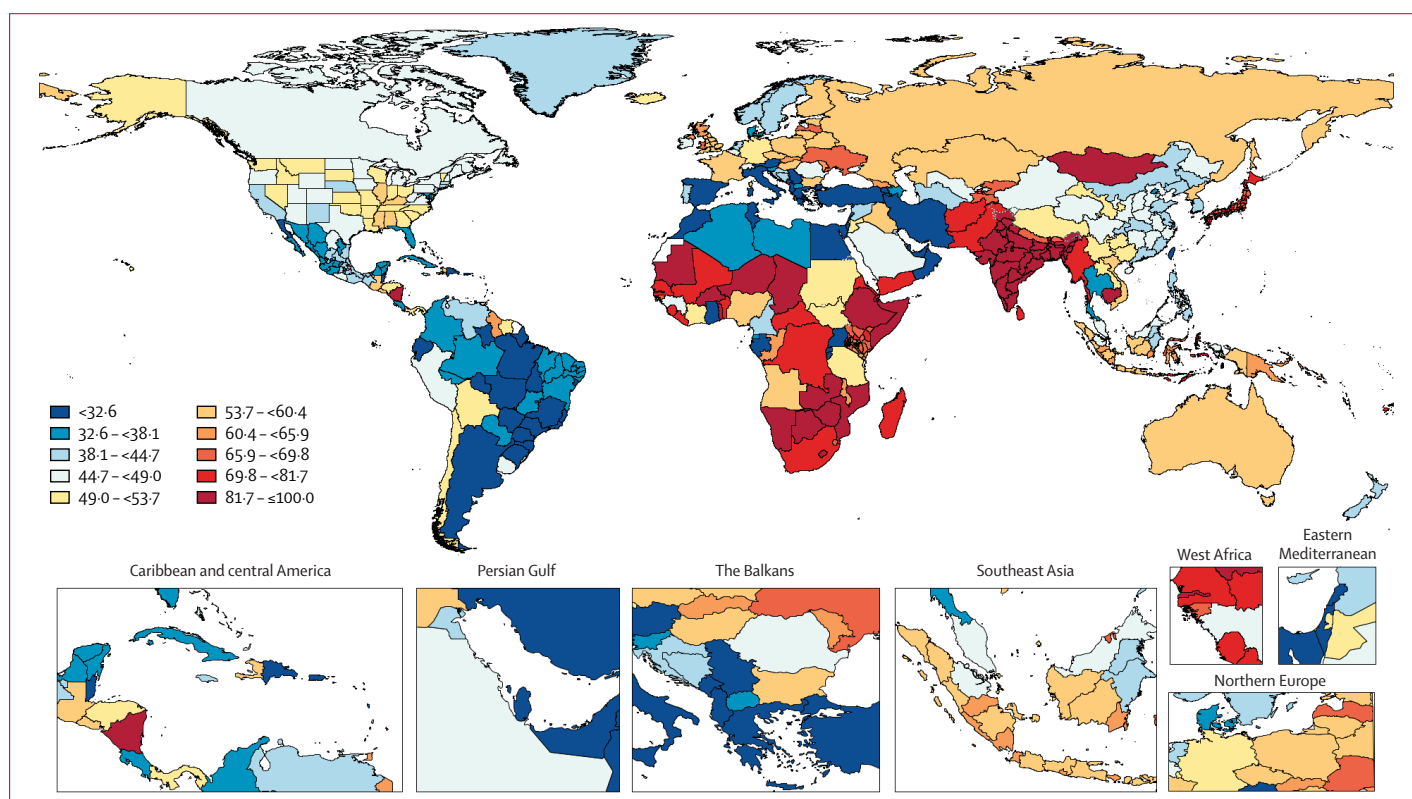


Figure 3: Age-standardised all-cause SEV by location, both sexes combined, 2019

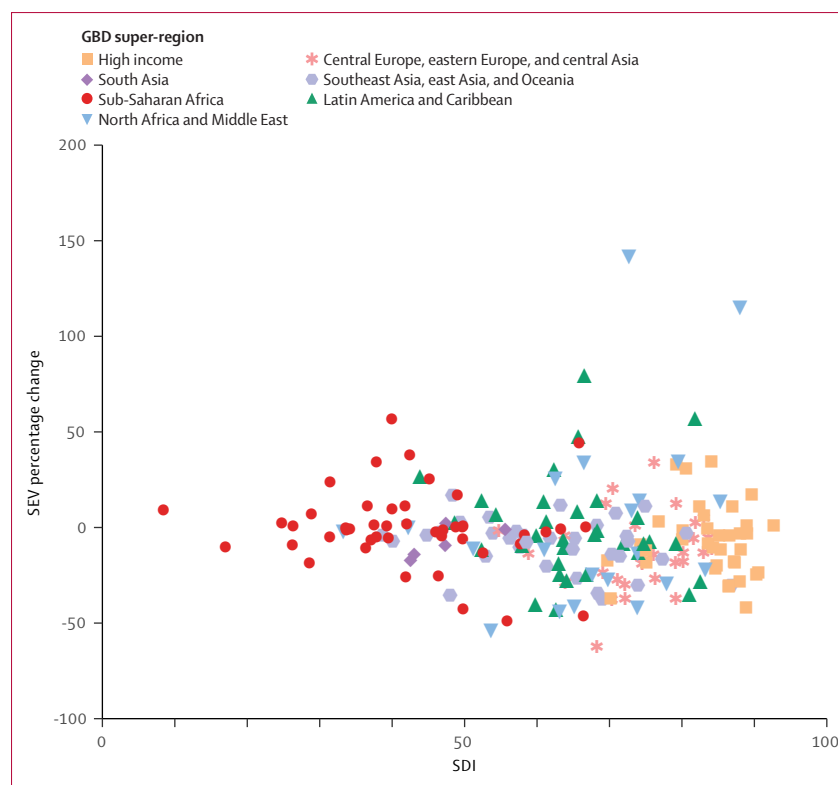


Figure 4: Percentage change in all-cause age-standardised SEV by SDI, both sexes combined, 1990–2019

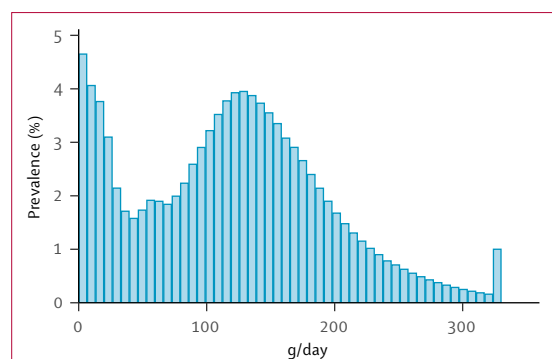


Figure 5: Percentage of population exposed to risk factor, both sexes combined, 2019

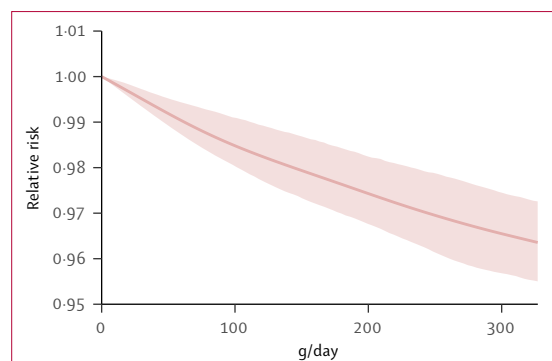


Figure 6: All-cause mortality relative risk, both sexes combined, 2019