Eight dietary priorities to halve cardiovascular mortality in the US and globally*

Strategy				**Estimated Reduction in CVD mortality (plausible range)‡**		
	Current consumption†	**Reasonable target change**	**Corresponding relative risk (95% CI)§**	**Relative risk reduction**	**Fewer US deaths**	**Fewer global deaths**
Increase fruits	~1-2 servings/day	Increase by 1 serving/day	CHD: 0.93 (0.89 to 0.96); stroke: 0.89 (0.85 to 0.93)	~8% overall (RR=0.82)	60 000 (30 000 to 75 000)	1.6 million (0.8 to 2.0 million)
Increase vegetables	~1-2 servings/day	Increase by 1 serving/day	CHD: 0.89 (0.83-0.95); stroke: NA	~7% overall (RR=0.93)	55 000 (28 000 to 70 000)	1.4 million (0.7 to 1.8 million)
Increase whole grains in place of starches, refined grains, and sugars	~0-1 serving/day, versus ~40-50% energy from starches, refined grains, and sugars	Increase by 1 serving/day (~200 kcal/day, or 10% energy) in place of starches, refined grains, and sugars	CVD: 0.90 (0.87 to 0.93)	~10% overall (RR=0.90)	80 000 (40 000 to 10 000)	2.0 million (1.0 to 2.5 million)
Increase nuts in place of starches, refined grains, and sugars	~0-1 serving/week, versus ~40-50% energy from starches, refined grains, and sugars	Increase by 2 servings/week (~50 kcal/day, or 2.5% energy) in place of starches, refined grains, and sugars	CHD: 0.84 (0.75 to 0.91); stroke: NA	~11% overall (RR=0.89)	90 000 (45 000 to 111 000)	2.2 million (1.1 to 2.8 million)
Increase vegetable oils in place of animal fats	~5-15% energy *v* ~10-20% energy from animal fats	Increase by 1.5 servings/day (~6.75 g/day, 60 kcal/day, or 3% energy) in place of animal fats	CHD: 0.93 (0.90 to 0.97); stroke: NA	~5% overall (RR=0.95)	40,000 (20 000 to 50 000)	1.0 million (0.5 to 1.3 million)

Increase fish and seafood	~25-150 mg/day EPA+DHA	Increase by 50 mg/day EPA+DHA	CHD: 0.92 (0.89-0.96); stroke: NA	~5% overall (RR=0.95)	40 000 (20 000 to 50 000)	1.0 million (0.5 to 1.3 million)
Limit dietary sodium ¶	~3-4 g/day	Reduce by 0.8 g/day	CVD: 0.94 (0.89-0.99)	~6% overall (RR=0.94)	50 000 (25 000 to 60 000)	1.2 million (0.6 to 1.5 million)
Limit industrial trans fats ¶	~1-2% energy	Reduce by 1% energy	CHD: 0.90 (0.85 to 0.90); stroke: NA	~7% overall (RR=0.93)	55 000 (28 000 to 70 000)	1.4 million (0.7 to 1.8 million)
Total benefits per year (multiplicative risk reduction) ¥				~52% overall (RR=0.48)	420 000, including 140 000 premature (210 000 to 525 000)	10.4 million, including 5.2 million premature (5.2 to 13 million)
Total benefits over 3 years					1 million+ (0.6 to 1.6 million)	30 million+ (15.6 to 39 million)

*Based on the robustness of evidence for causal effects and the estimated quantitative impact on CVD. The dietary factors with probable or convincing evidence for causal effects and the estimated quantitative effects (relative risks) were identified from meta-analyses of prospective cohort studies and/or randomized controlled trials and as part of ongoing work for the Global Burden of Disease (GBD) study.[5] In the absence of such evidence for any outcome subtype (e.g., CHD, stroke), zero effect was assumed.

†Typical ranges of consumption in many countries.

‡ Based on 810,000 US CVD deaths annually, including about one-third representing premature deaths before age 65y (i.e., high potential for delay or prevention), and 20 million global CVD deaths annually, including about half representing premature deaths. When the relative risk reduction varied for CHD versus stroke, the former was given two-third weight and the latter one-third weight to determine the overall relative risk reduction. In addition to the best central estimates of benefit, a range of plausible potential benefit was estimated based on the true benefits being only (a) half as large as expected or (b) 25% larger than expected. Estimates are rounded for presentation.

§Relative risks were obtained from meta-analyses of prospective cohort studies and/or randomized controlled trials, standardized to the targeted change for each dietary factor (e.g., one serving/day). See: Circulation 2011;123:2870-2891; PLoS Med 2010;7:e1000252; JAMA 2006;296:1885-99; BMJ 2009;339:b4567; and N Engl J Med 2006;354:1601-13.

¶ Specifying the specific replacement does not appear necessary due to little evidence for replacement-dependent effect modification in benefits.

¥Total risk reduction = 1- (relative risk$_1$ * relative risk$_2$ * etc.). A multiplicative risk reduction is more conservative and assumes smaller benefits than simple addition of effects. Randomized trials of physiologic risk factors and long-term observational studies of clinical CVD events demonstrate similar or greater benefits of overall healthy dietary patterns which include these dietary factors.[4]

CHD=coronary heart disease, DHA=docosahexaenoic acid, EPA=eicosapentaenoic acid.