



Table 4-B-I-1 Comparison of Dietary Components Across Diet Pattern Scores

| Components                  | Med Diet Score (MDS)<br>Trichopolou et al. 2003<br>EPIC-Greece        | Alternate Med Diet Score (aMed)<br>Fung et al. 2009<br>Nurses' Health Study                                  | Alternate HEI (AHEI)<br>McCullough et al. 2002<br>Health Professionals<br>Follow-up Study &<br>Nurses' Health Study                    | Alternative HEI (AHEI)-2010<br>Chiuve et al. 2012<br>Health Professionals<br>Follow-up Study & Nurses'<br>Health Study | Healthy Eating Index (HEI)-2005<br>Guenther et al. 2008<br>2005 DGAs                                  | Recommended Food Score (RFS)<br>Kant et al. 2000<br>Breast Cancer Detection & Demonstration Project  | DASH Score<br>Fung et al. 2008<br>Nurses' Health Study  |
|-----------------------------|---|--|--|--|---|--|---|
|                             | Total Score<br>0 - 9  | Total Score<br>0 - 9   | Total Score<br>2.5 - 87.5  | Total Score<br>0 - 110   | Total Score<br>0 - 100  | Total Score<br>0 - 23*   | Total Score<br>8 - 40   |
| Vegetables                  | <u>Vegetables</u> **(+)<br>≥Median = 1<br><Median = 0                 | Vegetables (not potatoes) <sup>(+)</sup><br>≥Median = 1<br><Median = 0                                       | Vegetables (not potatoes and French fries) <sup>(+)</sup><br>0 - 10<br>5 serv/d = 10   | Vegetables (not potatoes and French fries) <sup>(+)</sup><br>0 - 10<br>≥5 serv/d = 10                                  | Total vegetables <sup>(+)</sup><br>0 - 5<br><u>Dark green/orange/legumes</u> <sup>†(+)</sup><br>0 - 5 | Tomatoes; broccoli; spinach; mustard, turnip, collard greens; carrots or mixed vegetables w/ carrots; green salad; sweet potatoes, yams; other potatoes <sup>(+)</sup> | Vegetables (not potatoes and legumes) <sup>(+)</sup><br>1 - 5<br>Lowest to Highest quintile   |
| Legumes                     | <u>Legumes</u> <sup>(+)</sup><br>≥Median = 1<br><Median = 0           | Legumes <sup>(+)</sup><br>≥Median = 1<br><Median = 0   |  | Nuts & Legumes<br>0 - 10<br>≥1 serv/d = 10   | Dark green/orange/legumes <sup>†</sup><br>0 - 5   | Dried beans <sup>(+)</sup>   | Nuts & Legumes<br>1 - 5<br>Lowest to Highest quintile   |
| Fruits and/or Nuts          | <u>Fruits &amp; Nuts</u> <sup>(+)</sup><br>≥Median = 1<br><Median = 0 | Fruits <sup>(+)</sup><br>≥Median = 1<br><Median = 0<br><br>Nuts <sup>(+)</sup><br>≥Median = 1<br><Median = 0 | <u>Fruits</u> <sup>(+)</sup><br>0 - 10<br>4 serv/d = 10<br><br><u>Nuts &amp; Soy Protein</u> <sup>(+)</sup><br>0 - 10<br>1 serv/d = 10 | Fruits <sup>(+)</sup><br>0 - 10<br>≥4 serv/d = 10<br><br>Nuts & Legumes<br>0 - 10<br>≥1 serv/d = 10                    | Total fruit <sup>†(+)</sup><br>0 - 5<br>Whole fruits <sup>††(+)</sup><br>0 - 5                        | Apples or pears; oranges; cantaloupe; orange or grapefruit juice; grapefruit; other fruit juices <sup>(+)</sup>  | <u>Fruits</u> and fruit juices <sup>(+)</sup><br>1 - 5<br>Lowest to Highest quintile<br><br>Nuts & Legumes<br>1 - 5<br>Lowest to Highest quintile |
| Cereals and/or Whole Grains | Cereals <sup>(+)</sup><br>≥Median = 1<br><Median = 0                  | Whole grains <sup>(+)</sup><br>≥Median = 1<br><Median = 0  | Cereal Fiber <sup>(+)</sup><br>0 - 10<br>15g/d = 10  | <u>Whole Grains</u> <sup>(+)</sup><br>0 - 10<br>75g/d ♀ = 10<br>90g/d ♂ = 10   | Total grains <sup>(+)</sup> 0 - 5<br><u>Whole grains</u> <sup>(+)</sup> 0 - 5                         | Dark breads (wh wheat, rye, pumpernickel); cornbread, tortillas & grits; high-fiber cereals; cooked cereals <sup>(+)</sup>   | Whole Grains <sup>(+)</sup><br>1 - 5<br>Lowest to Highest quintile  |
| Fish or Fresh Fish          | <u>Fish</u> <sup>(+)</sup><br>≥Median = 1                             | Fish <sup>(+)</sup><br>≥Median = 1   |  |  |   | Baked or broiled fish <sup>(+)</sup>   |   |



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|----------------|---|---|--|--|--|---|--|
|                | Total Score<br>0 - 9  | Total Score<br>0 - 9  | Total Score<br>2.5 - 87.5  | Total Score<br>0 - 110   | Total Score<br>0 - 100   | Total Score<br>0 - 23*  | Total Score<br>8 - 40  |
|                | <Median = 0   | <Median = 0   |  |  |  |   |  |
| Fat            | <u>MUFA/SFA</u> <sup>(+)</sup><br>≥Median = 1<br><Median = 0      | MUFA/SFA <sup>(+)</sup><br>≥Median = 1<br><Median = 0                       | PUFA/SFA <sup>(+)</sup><br>0 - 10<br>≤0.1 to ≥1.0  | Long-chain fats (EPA + DHA)<br><sup>(+)</sup><br>0 - 10<br>0 - 250 mg/d<br>PUFA % energy<br>≤2 to ≥10                  | SFA <sup>(-)</sup><br>0 - 10<br>≥15% - ≤7% E<br><br><u>Healthy oils</u> <sup>††(+)</sup><br>0 - 10<br>0 - 12 g/d |   |  |
| Alcohol        | <u>5 - 25</u> ♀<br><u>10 - 50</u> ♂<br>g/d = 1 <sup>(+m)</sup>    | 5 - 15 g/d = 1 <sup>(+m)</sup>  | <u>0.5 - 1.5</u> ♀<br><u>1.5 - 2.5</u> ♂<br>Drinks/d = 10 <sup>(+m)</sup>  | <u>0.5 - 1.5</u> ♀<br><u>0.5 - 2.0</u> ♂<br>Drinks/d = 10 <sup>(+m)</sup>  | Solid fats, <u>alcoholic beverages</u> & added sugars <sup>(-)</sup><br>0 - 20<br>≥50% - ≤20% E                  |   |  |
| Total Meat     | Meat & Meat Products <sup>(-)</sup><br>≥Median = 0<br><Median = 1 | Red & Processed Meat <sup>(-)</sup><br>≥Median = 0<br><Median = 1           | <u>White/Red Meat Ratio</u> <sup>(+)</sup><br>0 - 10, 4 = 10<br>White meat = poultry & fish<br>Red meat = beef, pork, lamb & processed meats | <u>Red &amp; Processed Meat</u> <sup>(-)</sup><br>0 - 10<br>≥1.5 - 0 serv/d  | Meat & Beans <sup>(+)</sup><br>0 - 10  | Baked or stewed chicken or turkey <sup>(+)</sup>  | Red & Processed Meat <sup>(-)</sup><br>1 - 5<br>Highest to Lowest quintile |
| Dairy Products | Dairy Products <sup>(-)</sup><br>≥Median = 0<br><Median = 1       |   |  |  | Milk, yogurt, cheese, & soy beverages <sup>(+)</sup><br>0 - 10   | 2% milk and beverages w/ 2% milk; 1% or skim milk <sup>(+)</sup>                                    | Low-fat dairy <sup>(+)</sup><br>1 - 5<br>Lowest to Highest quintile        |
| Sweets or      |   |   |  | Sugar Sweetened Beverages & Fruit Juice <sup>(-)</sup> 0 - 10  | Solid fats, alcoholic  |   | Sweetened beverages <sup>(-)</sup><br>1 - 5                                |



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| Sugar Products                   |  |   |   | ≥1 - 0 serv/d  | beverages & added sugars <sup>(-)</sup><br>0 - 20<br>≥50% - ≤20% E   |   | Highest to Lowest quintile                             |
| Sodium                           |  |   |   | 0 - 10 <sup>(-)</sup><br>Highest to Lowest decile,<br>mg/d   | 0 - 10 <sup>(-)</sup><br>Highest to Lowest decile,<br>mg             |   | 1 - 5 <sup>(-)</sup><br>Highest to Lowest quintile     |
| Trans Fat                        |  |   | <u>Trans fat<sup>(-)</sup></u><br><u>% energy 0 - 10</u><br><u>≥4 to ≤0.5</u>                                       | Trans fat <sup>(-)</sup><br>% energy 0 - 10<br>≥4 to ≤0.5  |  |   |  |
| Multivitamin Use                 |  |   | <u>Multivitamin<sup>(+)</sup></u><br><u>2.5 (non-use)</u><br><u>7.5 (use)</u>                                       |  |  |   |  |
| #Associations with CVD Endpoints | 18 associated outcomes   | 5 associated outcomes   | 4 associated outcomes   | 3 associated outcomes  | 3 associated outcomes  | 3 associated outcomes   | 6 associated outcomes                                  |

\*Total score = sum of 23 items (1 pt/item) consumed ≥1X/wk.

<sup>‡</sup>Includes 100% juice.

<sup>††</sup>Includes all forms except juice.

<sup>†</sup>Includes legumes only after meat & beans standard is met.

<sup>††</sup>Includes non-hydrogenated vegetables oils and oils in fish, nuts and seeds.

(+) Positive components

(-) Negative components



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(+m) Positive in moderation

Listed 2X for respective food groups

\*\* *Food components* that were associated with either favorable or unfavorable CVD outcomes in studies with favorable associations between *total score* and CVD endpoint outcomes.

Several of the studies that utilized scores that successfully predicted CVD outcomes also assessed food group components. Given the scores that are highlighted in table 1, component analysis was done for the MDS, HEI-2005, AHEI, AHEI-2010, and DASH-Fung.

**MDS:** For MDS, in the SUN cohort, Martinez-Gonzalez found that only the fruits & nuts group was favorably associated with incidence of CVD (Martinez-Gonzalez, 2011 [MDS]). However, when the MDS was tested in the EPIC-Netherlands cohort, the association of the MDS with CVD and MI was attenuated most when alcohol was excluded from the score, and alcohol was operationalized differently from the original MDS in that alcohol intake was dichotomized into users and non-users (1 point for  $\geq 1$  drink/month and 0 for  $< 1$  drink/month) (Hoevenaer-Blom, 2012 [MDS]). In one study that examined cerebrovascular disease, the food groups that had an inverse association were vegetables, legumes, and monounsaturated fats in the EPIC-Greece cohort (Misiri, 2012 [MDS]).

**HEI-2005:** For the HEI-2005, dark-green and orange vegetables, whole grains, and energy from solid fat, alcohol, and added sugar were significantly associated with lower risk of CHD (Chiuve, 2012 [HEI, AHEI]). The inverse association for the solid fat, alcohol, and added sugar component was driven by alcohol intake. Vegetable oils were associated with risk of CHD among women only.

**AHEI:** For AHEI, in individual AHEI component analyses, fruits, the white/red meat ratio, *trans* fat, multivitamin use, and alcohol consumption were each associated with decreased CVD risk (Belin, 2011 [AHEI, DMI]).

**AHEI-2010:** For the AHEI-2010, whole grains and alcoholic beverages were inversely associated, and red and processed meats were positively associated with risk of CHD (Chiuve, 2012 [HEI, AHEI]).

**DASH:** For the DASH-Fung score, comparing highest to lowest quintiles of score, the fruit component was associated with decreased risk of CVD (Fitzgerald, 2011 [DASH]).