



Table 4-B-II-1 Summary of Findings

Dietary patterns identified using factor analysis (FA) of cluster analysis (CA) and association with risk of cardiovascular disease (CVD)

Author, Year, Quality Rating, Study Design, Cohort	Sample Size, Location, Duration, Dietary Assessment, Methodology / Number Patterns	Age, Percent Female, Race / Ethnicity, Outcome / Comparison, Number of Events	Dietary Patterns Associated With Lower CVD Risk	Dietary Patterns With No Significant Association With CVD	Dietary Patterns Associated With Higher CVD Risk
<p>Harriss et al, 2007</p> <p>Positive</p> <p>Prospective Cohort</p> <p>Melbourne Collaborative</p>	<p>N=40,653</p> <p>Australia</p> <p>10.4 years</p> <p>FFQ (112- item)</p> <p>FA: Four patterns</p>	<p>40 years to 69 years</p> <p>59%</p> <p>24% (Southern European immigrants)</p> <p>CVD mortality, highest vs. lowest quartile</p> <p>Mortality: 697 events</p>	<p>Factor 1: Mediterranean (garlic, cucumber, olive oil, salad greens, capsicum, cooked dried legumes, soups, feta and ricotta cheeses, olives, steamed fish and broiled chicken): HR=0.51 (95% CI: 0.30, 0.88); P_{trend}=0.03</p>	<p>Factor 2: Vegetables (cauliflower; broccoli; carrots; cabbage or Brussels sprouts; pumpkin; green beans or peas; leafy greens; celery or fennel; potato cooked without fat; beetroot; zucchini, squash or eggplant; coleslaw; salad greens; cucumber and capsicum); NS</p> <p>Factor 3: Meat (beef rissoles, roast beef or veal, fried potatoes, beef or veal schnitzel, savory pastries, mixed dishes with lamb, fried eggs, beef steaks, fried fish and bacon); NS</p> <p>Factor 4: Fresh fruit (apricots, peaches or nectarines, plums, cantaloupe or honeydew, grapes, watermelon, pears, strawberries, oranges or mandarins, figs, apples and pineapple); NS</p>	
<p>Heidemann et al, 2008</p> <p>Positive</p> <p>Prospective Cohort</p> <p>Nurses' Health Study</p>	<p>N=72,113</p> <p>U.S.</p> <p>18 years</p> <p>FFQ (116- item)</p> <p>FA: Two patterns</p>	<p>48 years to 53 years</p> <p>100%</p> <p>97% White</p> <p>CVD mortality, highest vs. lowest quintile</p> <p>Mortality: 1,154 events</p>	<p>Prudent (vegetables, fruit, legumes, fish, poultry and whole grains): RR=0.72 (95% CI: 0.60, 0.87); P<0.001</p>		<p>Western (red and processed meats, refined grains, French fries, sweets and desserts): RR=1.22 (95% CI: 1.01, 1.48); P=0.009</p>



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<p>Maruyama et al, 2012</p> <p>Positive</p> <p>Prospective cohort</p> <p>Japan Collaborative Cohort (JACC) Study</p>	<p>N=64,037</p> <p>Japan</p> <p>Median: 12.6 years</p> <p>FFQ (40-item)</p> <p>FA: Three patterns</p>	<p>40 years to 79 years</p> <p>59%</p> <p>Not reported</p> <p>CVD mortality and risk, highest vs. lowest quintile</p> <p><i>Mortality</i>: 2,311 events</p>	<p>CVD Mortality</p> <p>Vegetable [fresh fish, vegetables, fungi, potatoes, algae, tofu (soybean curd) and fruits]</p> <p><i>Women</i>: HR=0.67 (95% CI: 0.43, 1.06), P_{trend}=0.05</p> <p><i>Men</i>: NS</p> <p>CVD Risk</p> <p>Dairy product pattern (milk and dairy products, butter, margarine, fruits, coffee and tea)</p> <p><i>Women</i>: HR=0.76 (95% CI: 0.61 to 0.94), P_{trend}=0.01</p> <p><i>Men</i>: NS</p>	<p>CVD Risk</p> <p>Animal food (meats, fish and deep-fried foods or tempura), NS for either sex</p>	
<p>Menotti et al, 2011</p> <p>Neutral</p> <p>Prospective Cohort</p> <p>Two Rural Villages From Seven Countries Study</p>	<p>N=1,153 for CHD incidence at 20 years</p> <p>N=1,221 for mortality at 40 years</p> <p>Italy</p> <p>Diet History</p> <p>FA: Three patterns</p>	<p>40 years to 59 years</p> <p>0% Women</p> <p>Not reported</p> <p>CVD Incidence and Mortality</p> <p><i>CVD incidence</i>: 513 events</p>	<p>Factor 2 (bread, cereals, pasta, potatoes, vegetables, fish, oils), P values were not reported.</p> <p>CVD mortality (40 years): HR=0.87 (95% CI: 0.78, 0.96)</p>	<p>Factor 1 (sugar, milk, meat, fruit, pastries, cheese); NS</p> <p>Factor 3 (eggs, alcoholic beverages); NS</p>	
<p>Nettleton et al, 2009</p>	<p>N=5,316</p>	<p>45 years to 84 years</p>	<p>Whole grains and fruit (whole grains,</p>	<p>Fats and processed meat (added fats,</p>	



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<p>Positive</p> <p>Prospective Cohort</p> <p>MESA</p>	<p>U.S.</p> <p>4.6 years (median of follow-up)</p> <p>FFQ (120-item)</p> <p>FA: Four patterns</p>	<p>53%</p> <p><i>White:</i> 43% <i>Black:</i> 24% <i>Hispanic:</i> 21% <i>Chinese:</i> 12%</p> <p>All CVD (fatal and non-fatal) and Hard CVD (incidence): highest vs. lowest quintile</p> <p><i>All CVD:</i> 207 events <i>Hard CVD:</i> 139 events</p>	<p>fruit, nuts and seeds, green leafy vegetables and low-fat dairy foods)</p> <p><i>Any CVD (fatal and non-fatal):</i> HR=0.54 (95% CI: 0.33, 0.91); $P_{trend}=0.007$</p> <p><i>Hard CVD:</i> HR=0.37 (95% CI: 0.19, 0.72); $P_{trend}=0.002$</p>	<p>processed meat, fried potatoes and desserts); NS</p> <p>Vegetables and fish (several vegetable groups, fish, soup, Chinese foods, red meat, poultry and soy); NS</p> <p>Beans, tomatoes and refined grains (beans, tomatoes, refined grains, high-fat dairy foods, avocado and red meat); NS</p>	
<p>Osler and Heitmann et al, 2001</p> <p>Neutral</p> <p>Prospective Cohort</p> <p>Danish WHO-MONICA Survey</p>	<p>N=5,871</p> <p>Denmark</p> <p>Median: 15 years</p> <p>FFQ (28-item)</p> <p>FA: Two patterns</p>	<p>30 years to 70 years</p> <p>49%</p> <p>Not reported</p> <p>CVD mortality, highest vs. lowest quartile</p> <p><i>Mortality:</i> 108 events</p>	<p>Prudent diet (whole meal cereals, fruit and vegetables); P-values were not reported.</p> <p><i>Women:</i> HRRE=0.87 (95% CI: 0.71, 1.06)</p> <p><i>Men:</i> HRRE=0.63 (95% CI: 0.44, 0.90)</p>	<p>Western food pattern (meat products, butter and white bread, which reflected the primary characteristics of traditional Danish main meals); NS</p>	
<p>Shimazu et al, 2007</p> <p>Positive</p> <p>Prospective Cohort</p> <p>Ohsaki NHI Cohort</p>	<p>N=40,547</p> <p>Japan</p> <p>Seven years</p> <p>FFQ (40-item)</p>	<p>40 years to 79 years</p> <p>Not reported</p> <p>CVD mortality, highest vs. lowest quartile</p>	<p>Japanese pattern (soybean products, fish, seaweeds, vegetables, fruits and green tea): HR=0.74 (95% CI: 0.59 to 0.91), $P_{trend}=0.004$</p>	<p>DFA pattern [High-dairy (milk and yogurt), margarine, fruits and vegetables (carrot, pumpkin and tomato)]; NS</p>	<p>Animal pattern [Animal-derived products (beef, pork, ham, sausage, chicken, liver and butter), coffee and alcohol]: HR=1.24 (95% CI: 1.00 to 1.54), $P_{trend}=0.02$</p>



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	FA: Three patterns	Mortality: 801 events			
Panagiotakos et al, 2008 Positive Prospective Cohort ATTICA	N=3,042 Greece Five years FFQ (156-item) FA: 15 components	18 years to 89 years 50% Not reported CVD risk (fatal and non-fatal), highest vs. lowest quintile Mortality: 170 events	Food components and risk of developing CVD (P<0.05) Component 2 (Cereals, small fish, hardtack and olive oil): HR=0.72 (95% CI: 0.52, 1.00) Component 5 (Fruits, vegetables, and olive oil): HR=0.80 (95% CI: 0.66, 0.97)	Food components and risk of developing CVD; NS • <i>Component 1</i> : Cereals, potatoes and bread • <i>Component 3</i> : Poultry • <i>Component 4</i> : Legumes • <i>Component 6</i> : Low-fat dairy products • <i>Component 9</i> : Fish • <i>Component 10</i> : Red meat, pork and margarine • <i>Components 11 to 14</i> : Mainly characterized by coffee, tea, nuts (without salt), wild tea, and chocolate	Food components and risk of developing CVD (P<0.05) Component 7 (Sweets, red meat, margarine and nuts with salt): HR=1.32 (95% CI: 1.05, 1.66) Component 8 (Cheese and nuts with salt): HR=1.26 (95% CI: 1.01, 1.56) Component 15 (Alcoholic beverages): HR=1.26 (95% CI: 0.99, 1.60)
	CA: Three groups	Group 3 vs. Group 1		Comparator Group 1 (healthy dietary choices including increased fish, nuts without salt, legumes, low-fat dairy, fruits and vegetables, potatoes, cereals, moderate red meat and poultry and less coffee drinking)	Group 3 (unhealthier choices including reduced fish, nuts, legumes, dairy, fruits and vegetables, potatoes, cereals and poultry intake, but increased red meat, sweets and alcohol): HR=2.0 (95% CI: 1.12, 3.54)
		Group 2 vs. Group 3		Comparator Group 3 (unhealthier choices: Reduced fish, nuts, legumes, dairy, fruits and vegetables, potatoes, cereals and poultry intake, but increased red meat, sweets and alcohol)	Group 2 (between healthy and unhealthy options: In the middle of the other groups in terms of consumption); HR=1.6 (95% CI: 1.02, 2.50)
Hlebowicz et al,	N=4,999	45 years to 68 years		<i>Comparator</i> : Many foods and drinks (MFD)	No P-values were reported.



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<p>2011</p> <p>Neutral</p> <p>Prospective Cohort</p> <p>Malmö Diet and Cancer CVD Programme</p>	<p>Sweden</p> <p>13 years</p> <p>Dietary history</p> <p>CA: Six groups</p>	<p>59%</p> <p>Not reported</p> <p>CVD risk (fatal and non-fatal); each group vs. "Many foods and drinks" (MFD)</p> <p><i>Incident: 449 events</i></p>		<p>HR and P-value not reported:</p> <p>White bread (white bread, low-fat margarine, high-fat and low-fat meats and sweets)</p> <p>Low fat and high fiber (fruits, low-fat milk, both high-fat and low-fat meats and sweets)</p> <p>Fiber bread (fiber-rich bread, meats, sweets, fruits, low-fat margarines and boiled potatoes)</p>	<p>Milk fat [Bregott (a spread consisting of butter and rapeseed oil) cheese, whole milk, white bread and sweets):</p> <p><i>Women: HR=2.2 (95% CI: 1.09, 4.44)</i></p> <p><i>Men: HR=1.18 (95% CI: 0.72, 1.92)</i></p> <p>Sweets and cakes (sugar, sweets, jam, cakes, biscuits and soft drinks):</p> <p><i>Women: HR=2.14 (95% CI: 1.17, 3.93)</i></p> <p><i>Men: HR=1.10 (95% CI: 0.72, 1.71)</i></p>



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