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Eating Competence of Elderly Spanish Adults Is Associated with a Healthy Diet and a Favorable Cardiovascular Disease Risk Profile[1–3]

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Abstract

Eating competence (EC), a bio-psychosocial model for intrapersonal approaches to eating and food-related behaviors, is associated with less weight dissatisfaction, lower BMI, and increased HDL-cholesterol in small U.S. studies, but its relationship to nutrient quality and overall cardiovascular risk have not been examined. Prevención con Dieta Mediterránea (PREDIMED) is a 5-y controlled clinical trial evaluating Mediterranean diet efficacy on the primary prevention of cardiovascular diseases (CVD) in Spain. In a cross-sectional study, 638 PREDIMED participants (62% women, mean age 67 y) well phenotyped for cardiovascular risk factors were assessed for food intake and EC using validated questionnaires. Overall, 45.6% were eating-competent. EC was associated with being male and energy intake ($P < 0.01$). After gender and energy adjustment, participants with EC compared with those without showed higher fruit intake and greater adherence to the Mediterranean diet ($P < 0.05$) and tended to consume more fish ($P = 0.076$) and fewer dairy products ($P = 0.054$). EC participants tended to have a lower BMI ($P = 0.057$) and had a lower fasting blood glucose concentration and serum LDL-:HDL-cholesterol ratio ($P < 0.05$) and a higher HDL-cholesterol concentration ($P = 0.025$) after gender adjustment. EC participants had lower odds ratios (OR) of having a blood glucose concentration >5.6 mmol/L (0.71; 95% CI 0.51–0.98) and HDL-cholesterol <1.0 mmol/L (0.70; 95% CI 0.68–1.00). The OR of actively smoking, being obese, or having a serum LDL-cholesterol concentration ≥3.4 mmol/L were <1.0, but the 95% CI included the 1.0 ($P > 0.1$). Our findings support further examination of EC as a strategy for enhancing diet quality and CVD prevention. J. Nutr. 140: 1322–1327, 2010.

Introduction

Eating competence (EC),[12] as defined by the Satter Eating Competence Model (ecSatter), is a bio-psychosocial model that addresses intrapersonal approaches to eating and food-related behaviors (1). Competent eaters are positive, comfortable, and flexible with eating and are matter-of-fact and reliable about getting enough to eat of enjoyable and nourishing food. ecSatter encompasses 4 components: *1*) attitudes about eating and

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[3] This trial was registered at International Standard Randomized Controlled Trials with number 35739639.

[12] Abbreviations used: CVD, cardiovascular disease; EC, eating competence; ecSatter, Satter Eating Competence Model; ecSI, Satter Eating Competence Inventory; OR, odds ratio; PREDIMED, Prevención con Dieta Mediterránea.

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enjoyment of food; 2) food acceptance skills that enhance dietary variety; 3) internal regulation skills that address energy balance; and 4) skills and resources for managing mealtime structure, food selection, meal preparation, and orchestration of family meals. EC is measured with the ecSatter Inventory (ecSI), a 16-item, reliability-tested (2), self-report survey with demonstrated construct validity and internal consistency (3). Items assess affect, attitude, cognition, and behaviors around eating.

EC is predicated on synergy between permission to choose enjoyable foods in satisfying amounts and discipline to provide regular and reliable meals and snacks planned with consideration for food preferences as well as nutritional principles (1). ecSatter supports deliberate, consistent, and rewarding eating by stressing providing rather than depriving, food seeking rather than food avoidance. People with EC plan to feed themselves, seek food they enjoy, have regular meals, take time to eat, and tune in when they eat. They do not just grab food when they are hungry (1) but include all food groups in meals, like to cook, successfully cook from scratch, and use nutrition facts labels (3).

EC persons have a lower BMI and less body dissatisfaction, lower drive for thinness, less dietary restraint, and less disinhibited eating (3,4). They have fewer negative thoughts about eating and report more physical activity. In a small study of middle-aged dyslipidemic participants (5), EC correlated directly with serum HDL-cholesterol and inversely with resting and poststress systolic blood pressure, but these findings need to be validated in a larger study and other nonclinical populations. Furthermore, the influence of EC on the overall dietary pattern has not been investigated. Assessing food intake and cardiovascular risk status in relation to the EC level will better define the usefulness of this model as an approach to addressing/understanding eating practices and improving cardiometabolic factors.

Our aim in this study of a subsample from the Prevención con Dieta Mediterránea (PREDIMED) study (6), a large feeding trial testing the efficacy of the Mediterranean diet on the primary prevention of cardiovascular diseases (CVD), was to assess cross-sectional associations of EC with CVD risk biomarkers and explore its relationships with the Mediterranean food pattern and macronutrient and micronutrient intakes.

Methods

Study design and participants. The study included participants recruited into the PREDIMED trial, a multi-center, parallel-arm, single-blinded, 5-y, controlled clinical trial assessing the effects of 2 Mediterranean diets supplemented with either extra virgin olive oil or mixed nuts compared with advice on a low-fat diet on the primary prevention of CVD in Spain. Full details of the study protocol, including the biomedical data collection, have been published elsewhere (6,7). Baseline data from the subset ($n = 638$) of participants who completed the ecSI are the focus of this analysis. This subset consisted of participants consecutively recruited in 3 PREDIMED centers (Barcelona North, Reus, and Valencia) from 15 October 2005 to 14 April 2006. Institutional Review Boards of the participating centers in Spain approved the study protocol.

Eligible participants were community-dwelling men, aged 55–82 y, and women, aged 60–83 y, who were free of CVD and met at least 1 of the 2 following criteria: a diagnosis of type 2 diabetes mellitus or the presence of 3 or more CVD risk factors (smoking, hypertension, dyslipidemia, overweight, or family history of early-onset coronary heart disease). Exclusion criteria included history of CVD, any severe chronic illness, drug or alcohol abuse, low predicted likelihood of changing dietary habits according to the stages of change model (8), and a history of food allergy or intolerance to olive oil or nuts.

Measurements. Adherence to the Mediterranean diet was assessed with a 14-item questionnaire that is an extension of a previously validated 9-item index (9). Possible scores ranged from 0 to 14. Dietary intake was estimated in face-to-face interviews with the dietitian from a validated 137-item FFQ (10). Information on educational achievement, history of smoking, prior illnesses, and medication use was also collected.

EC was measured with ecSI, a self-report inventory of 16 Likert-scaled items summed to yield a total score and 4 subscale scores that parallel the 4 EC themes: eating attitudes, food acceptance, internal regulation, and contextual skills (1–3). PREDIMED investigators translated the ecSI into Spanish from English taking as reference a translation for Spanish-speaking Americans. The ecSI was completed by participants in a face-to-face interview with the dietitian prompting when necessary. Possible ecSI scores ranged from 0 to 48 (overall), 0 to 15 (eating attitude or contextual skills), and 0 to 9 (food acceptance or internal regulation).

Trained personnel made the following measurements: weight and height with calibrated scales and a wall-mounted stadiometer, respectively; waist circumference midway between the lowest rib and the iliac crest using an anthropometric tape; and blood pressure in triplicate with a validated semiautomatic oscillometer (HEM-70CP; OMRON). Energy and nutrient intakes were derived from Spanish food composition tables (11). Samples of fasting serum were coded, shipped to a central laboratory, and stored at −80°C until assay. Analytes measured in frozen serum samples were glucose by the glucose-oxidase method, cholesterol and triglyceride by enzymatic procedures (Trinder; Bayer Diagnostics, adapted to a Cobas-Mira automated analyzer; Hoffman-LaRoche), and HDL cholesterol after precipitation with phosphotungstic acid and magnesium chloride (12). The LDL cholesterol concentration was estimated as total cholesterol − HDL cholesterol − triglycerides/2.3 (mmol/L) (13).

Statistical methods. Statistical analyses were performed using SPSS (version 16) For all analyses, $P \leq 0.05$ was considered significant. ecSI total and subscales were scored by summing the 16 items; total scores

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TABLE 1 Characteristics of participants by gender[1]

Variables	Men	Women	*P*-value
n	243	395	
Age, *y*	66.7 ± 6.4	67.7 ± 5.7	0.037
Cardiovascular risk factors, *%*			
Family history of early-onset coronary heart disease	18	22	0.144
Obesity (BMI $\geq$30 kg/m^2)	41	58	$<$0.001
History of diabetes	57	53	0.309
History of hypertension	80	86	0.078
History of hyperlipidemia	70	76	0.099
Active smoker	20	3.5	$<$0.001
Medications, *%*			
Antihypertensive drugs	69	68	0.836
Statins	34	43	0.023
Other hypolipidemic agents	8	7	0.512
Oral antidiabetic agents	32	31	0.800
Insulin	7	9	0.356
Mediterranean diet score[2]	8.3 ± 1.9	8.3 ± 1.8	0.933
Energy intake, *kJ/d*	10936 ± 2822	9404 ± 2370	$<$0.001
EC scores[3]			
Eating attitudes	12.1 ± 2.6	10.8 ± 3.0	$<$0.001
Food acceptance	4.7 ± 2.4	4.5 ± 2.4	0.378
Contextual skills	9.7 ± 2.7	9.8 ± 2.9	0.735
Internal regulation	5.4 ± 2.1	5.2 ± 2.1	0.164
Total score	31.9 ± 5.9	30.3 ± 6.4	0.001

[1] Values are means ± SD or percent.

[2] Possible score ranges from 0 to 14.

[3] Possible score ranges are 0–15 (eating attitudes and contextual skills), 0–9 (food acceptance and internal regulation), and 0–48 (total score).

TABLE 2 Clinical and laboratory characteristics and EC subscores by EC group[1]

	EC		
Variables	Yes (score $\geq$32)	No (score $<$32)	*P*-value
n	291	347	
Age, *y*	67.7 (67.0–68.4)	67.1 (66.4–67.7)	0.212
Formal education, *y*	7.1 (6.7–7.4)	6.9 (6.6–7.2)	0.457
BMI, *kg/m²*	30.2 (29.7–30.7)	30.8 (30.4–31.3)	0.057
Waist circumference, *cm*	102.5 (101–104)	103.3 (102–104)	0.324
Systolic blood pressure, *mm Hg*	151 (149–153)	150 (148–152)	0.370
Diastolic blood pressure, *mm Hg*	85 (83–86)	84 (83–85)	0.236
Serum biochemistry[2]			
Fasting glucose, *mmol/L*	6.77 (6.49–7.05)	7.22 (6.94–7.44)	0.034
Total cholesterol, *mmol/L*	5.49 (5.39–5.59)	5.52 (5.41–5.62)	0.744
LDL-C, *mmol/L*	3.34 (3.26–3.44)	3.47 (3.37–3.55)	0.095
HDL-C, *mmol/L*	1.42 (1.40–1.48)	1.37 (1.35–1.40)	0.025
Triglycerides, *mmol/L*	1.57 (1.47–1.67)	1.51 (1.42–1.60)	0.431
Total-:HDL-cholesterol ratio	4.0 (3.9–4.1)	4.2 (4.1–4.3)	0.031
LDL-:HDL-cholesterol ratio	2.5 (2.4–2.6)	2.7 (2.6–2.8)	0.007
EC scores[3]			
Eating attitudes	13.1 ± 0.1	9.8 ± 0.1	$<$0.001
Food acceptance	5.7 ± 0.1	3.5 ± 0.1	$<$0.001
Contextual skills	10.9 ± 0.2	8.8 ± 0.1	$<$0.001
Internal regulation	6.5 ± 0.1	4.3 ± 0.1	$<$0.001
Total score	36.3 ± 0.2	26.4 ± 0.2	$<$0.001

[1] Values are means (95% CI), adjusted for gender, or ± SE.

[2] Missing values in 4 participants.

[3] Possible score ranges are 0–15 (eating attitudes or contextual skills), 0–9 (food acceptance or internal regulation), and 0–48 (total score).

$\geq$32 indicated EC (3). Gender differences in ecSI scores were examined with *t* tests. Group differences in clinical variables, cardiovascular biomarkers, and food and nutrient intakes between individuals considered EC (ecSI $\geq$32) compared with those with lower scores were examined with analysis of variance. All between-group comparisons were adjusted for gender because of significant differences between men and women. Because energy intake differed by EC status, food and nutrient consumption values were energy adjusted for analyses. We excluded participants whose energy intake, as derived from the FFQ, was outside prespecified ranges (2100–14,650 kJ/d for women and 3350–16,750 kJ/d for men) (14) from the calculations of food, energy, and nutrient intake. The odds ratios (OR) and 95% CI for prevalence of CVD risk factors by EC status were calculated by logistic regression. All models were adjusted by gender. Reference values for the clinical and biological markers were defined as those that clearly increase risk for CVD (15,16): BMI $\geq$30 kg/m^2, blood pressure $>$130/85 mm Hg, fasting blood glucose $>$5.6 mmol/L (100 mg/dL), LDL-cholesterol $\geq$3.4 mmol/L (130 mg/dL), HDL-cholesterol $<$1.0 mmol/L (40 mg/dL), triglycerides $\geq$1.7 mmol/L (150 mg/dL), and smoking status. The models examining blood glucose status were additionally adjusted for oral antidiabetic agent and insulin treatment, while those testing lipid variables were adjusted for use of statins and other hypolipidemic drugs. Values in the text are means ± SD and OR (95% CI).

Results

Participant characteristics. Participants were elderly with a large burden of cardiovascular risk factors (**Table 1**). Obesity and diabetes were present in nearly one-half of study participants and ~75% had a diagnosis of hyperlipidemia and $>$80% had hypertension. Gender differences were significant for several variables; women were older and heavier than men, but they had a lower frequency of smoking. Medication for cardiovascular risk factors was evenly distributed between genders, except for statins, which were taken more often by women. Adherence to an a priori defined scale of adherence to the Mediterranean diet was similar for men and women. As expected, men had higher energy intake (Table 1). Overall, 45.6% participants were defined as eating-competent. The mean ecSI score was 30.9 ± 6.3 and it was lower in women (P = 0.001) because of a lower eating attitudes score than men ($P < 0.001$). However, gender differences were significant for 10 of the 16 ecSI items (all eating attitudes and contextual skills; $P \leq 0.011$), with men scoring higher on all but 2 of them; women more frequently thought about nutrition and plans for eating (data not shown).

Cardiovascular risk factors and diet by EC. When controlling for gender, competent eaters, denoted by an ecSI score $\geq$ 32, were more likely to have a favorable cardiovascular risk profile (**Table 2**) with significantly higher serum HDL-cholesterol concentrations and lower fasting blood glucose and total cholesterol:HDL-cholesterol and LDL-cholesterol:HDL-cholesterol ratios. Medication use did not differ between EC groups (data not shown). Gender-adjusted mean EC scores were lower in diabetic (30.5 ± 6.6) compared with nondiabetic (31.4 ± 5.8) participants (P = 0.048) and tended to be lower in participants with a family history of early-onset coronary heart disease (29.9 ± 6.3) compared with those without (31.1 ± 6.2) (P = 0.068).

We excluded 25 participants from food, energy, and nutrient calculations, because they reported implausible energy intakes. Competent eaters consumed significantly more energy and had a higher energy-adjusted fruit intake and a marginally significant higher consumption of fish and lower consumption of dairy products (**Table 3**). Compared with those with lower ecSI scores,

TABLE 3 Daily energy, food, and nutrient intakes by EC group[1,2]

Dietary variables	EC		
	Yes (score ≥32)	No (score <32)	*P*-value
n	280	333	
Energy, *kJ/d*	10,145 (9868–10,421)	9634 (9378–9885)	0.008
Foods, *g*			
Cereals	259 (249–268)	251 (242–260)	0.238
Vegetables	286 (268–303)	304 (288–319)	0.134
Legumes	19.7 (18.6–21)	18.6 (17.5–19.7)	0.154
Fruits	282 (264–301)	250 (233–267)	0.013
Nuts	13.1 (11.3– 5)	11.6 (10–13.3)	0.232
Olive oil	38.6 (36.9–40.4)	37.4 (35.9–39)	0.320
Dairy products	359 (334–384)	392 (369–415)	0.054
Meat and meat products	109 (104–114)	109 (105–113)	0.980
Fish	78 (74–82)	73 (70–77)	0.076
Macronutrients, *% energy*			
Carbohydrate	42 (41–43)	42 (41–43)	0.619
Protein	22 (21–23)	22 (21–23)	0.958
Fat	34 (33–35)	34 (33–35)	0.986
Saturated	10.1 (9.9–10.4)	10.2 (10–10.5)	0.594
Monounsaturated	19.0 (18.6–19.5)	18.9 (18.5–19.4)	0.777
Polyunsaturated	6.4 (6.1–6.6)	6.1 (5.9–6.4)	0.193
(n-6) Fatty acids, *g*	13.8 (13.1–14.4)	13.5 (12.9–14.0)	0.483
α-Linolenic acid, *g*	1.51 (1.44–1.59)	1.43 (1.36–1.50)	0.112
(n-3) Fatty acids, *g*	0.75 (0.70–0.80)	0.69 (0.64–0.74)	0.094
Cholesterol, *mg*	376 (365–388)	382 (372–393)	0.465
Dietary fiber, *g*	27.7 (26.7–28.7)	27.2 (26.3–28.1)	0.495
Alcohol drinkers, *n (%)*	191 (67)	201 (59)	0.040
Alcohol,[2] *g*	13.6 (11.7–15.6)	13.0 (11.1–14.9)	0.639
Mediterranean diet score[3]	8.5 (8.3–8.7)	8.2 (8.0–8.4)	0.034

[1] Values are gender- and energy-adjusted means (95% CI), n = 25 participants excluded because of implausible energy intake values.

[2] Only in drinkers.

[3] Possible scores range from 0 to 14.

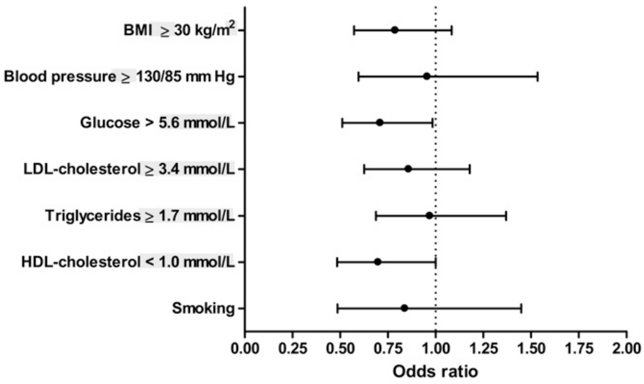

FIGURE 1 Odds for components of the cardiovascular risk profile in EC participants (score ≥32) compared with those with lower scores. Data were adjusted for gender and are presented as point estimates with 95% CI. Values are 0.79 (0.57–1.08) for BMI ≥30 kg/m^2; 0.96 (0.60–1.53) for blood pressure ≥130/85 mm Hg; 0.71 (0.51–0.98) for fasting serum glucose >5.6 mmol/L; 0.86 (0.63–1.18) for serum LDL-cholesterol ≥ 3.4 mmol/L; 0.97 (0.69–1.37) for serum triglycerides ≥1.7 mmol/L; 0.70 (0.68–1.0) for serum HDL-cholesterol <1.0 mmol/L; and 0.84 (0.49–1.45) for smoking.

EC participants tended to have a greater intake of (n-3) fatty acids ($P = 0.094$). More EC participants were alcohol drinkers and showed greater adherence to the Mediterranean diet than those not eating-competent (Table 3). Results did not change appreciably when the calculations were performed without exclusion of energy over- and underreporters.

Gender- and energy-adjusted micronutrient intake were similar between EC groups. However, when considering unadjusted values, EC participants compared with those with lower scores had higher intakes of sodium, potassium, iron, selenium, and vitamin B-6 ($P < 0.01$), as well as magnesium, zinc, and niacin ($P < 0.05$).

EC as a predictor of cardiovascular risk factor status. Compared with participants with lower scores, those eating-competent had an OR of 0.71 (95% CI, 0.51–0.98) of having a blood glucose concentration > 5.6 mmol/L and an OR of 0.70 (0.68 to 1.0) of having an HDL-cholesterol concentration < 1.0 mmol/L. Adjusting for oral antidiabetic agent and insulin treatment slightly weakened the OR of having a high blood glucose concentration to 0.72 (0.51 to 1.02). A similar attenuation of the OR for low HDL-cholesterol was observed after adjustment for statin and other hypolipidemic drug use (OR 0.61; 95% CI 0.36–1.05). The OR of having a BMI ≥ 30 kg/m^2, a serum LDL-cholesterol concentration ≥ 3.4 mmol/L, or being an active smoker were <1.0 but were not significant ($P > 0.1$) (**Fig. 1**). EC was not associated with hypertensive status or hypertriglyceridemia.

Discussion

In this study, we found that elderly individuals at high risk for CVD had healthier dietary habits and fewer cardiovascular risk factors with ecSI scores that denote EC, a reflection of positive eating-related behaviors. Study participants were 638 individuals from the PREDIMED study who completed the ecSI. The overall risk burden, dietary pattern, and score of adherence to the Mediterranean diet of this subsample are similar to those recently reported for larger PREDIMED samples (7,17). Scores on the ecSI results in this elderly Spanish sample parallel previous findings in a U.S. population (3), i.e. higher ecSI scores for men than women, less than one-half the sample denoted as eating-competent (45.6% for this study compared with 46.1% in the U.S. study), and similar mean ecSI scores (30.9 ± 6.3 for this sample compared with 31.1 ± 7.5 in the U.S. study). Differences between competent and noncompetent eaters appeared to be systemic: competent eaters' responses were significantly higher for all 16 ecSI items and differences between EC and non-EC persons were significant for all ecSI items as well.

Participants with EC had a lower prevalence of CVD risk factors, particularly a marginally significantly lower BMI, lower blood glucose concentration and cholesterol:HDL and LDL:HDL ratios, and higher HDL-cholesterol. Interestingly, EC participants had a higher energy intake, yet they had a lower BMI. These findings concur with those of Lohse et al. (3), who noted self-reported BMI was higher in the lowest tertile of ecSI scores and that compared with participants not EC, percent of sample categorized as overweight (BMI ≥ 25) was lower in EC persons. The associations of EC with lipid biomarkers of CVD mirrored those found in a smaller sample of 48 younger hyperlipidemic but otherwise healthy participants (5). Blood pressure levels or hypertensive status were not associated with EC in our sample, where >80% of the participants had a prior diagnosis of hypertension.

Biomarkers for CVD risk encourage assessment of the relationship between EC and dietary intake. In a prior study (3), the possibility of improved nutrition with increased EC was hypothesized. In that sample of 832 healthy adults from the general population, those in pre-action stages of change for increasing either fruit or vegetable intake had lower ecSI scores than those in action or maintenance stages of change. These relationships were replicated in a sample of low-income women (18). EC has been associated with a greater number of food preferences and fewer food dislikes; food preference correlates well with reported dietary intakes (19). In our study, participants with EC showed higher gender- and energy-adjusted fruit intake, greater adherence to the Mediterranean diet, and tended to consume more fish and fewer dairy products. Interestingly, EC was unrelated to years of formal education, a proxy for socioeconomic status that has been consistently associated with diet quality in cross-sectional studies (20).

Why is EC, which is measured by an instrument devoid of food-based or weight related questions, associated with lower BMI, a healthier diet, and better cardiovascular risk profile? EC tenets provide several plausible explanations. Competent Eaters provide themselves with a positive and reliable context for eating, enjoy food and eating, eat as much as they want of foods they enjoy, and are comfortable with their eating and enjoyment (1). They have less cognitive restraint and disinhibition with their eating (3). People with high overall ecSI scores, particularly those who have high scores with respect to eating attitudes, show little of the anxiety, ambivalence, and inconsistency experienced by those who attempt to adhere to external standards of food selection and regulation, feeling deprived if they eat the foods they should and guilty if they eat what they want (21). People with EC attitudes and behaviors are unlikely to impulsively overcome their inhibitions by vacillating between "being good" and "being bad" in their food selection, are unlikely to castigate themselves for eating "junk food," (22) or say they "eat a healthy mix of foods and then eat pleasure foods as a reward" (23). Competent eaters' comfort and cooperation with their inner experience and outer reality relative to eating reflect their overall attitudes about self and others. Compared with participants who have low levels of EC, competent eaters feel more effective and are more self-aware, less impulsive, and more trusting and comfortable with themselves and with other people (3).

Adults who consume the food they have prepared (24) have superior nutrient intakes (25). The link between meal consumption and good nutrition probably explains the higher fruit intake of EC people in this study, because fruit is generally eaten for dessert in Mediterranean diets. The EC nutrition education principle that emerges is that to support fruit intake, support positive and rewarding meals. In this study, Mediterranean diet scores were highest in those with high EC, indicating that those rewarding mealtimes conform to the definition of the Mediterranean diet. Social importance of mealtimes aside, meals provide reliable access to food and offer a wider variety of high-quality food than that commonly chosen for snacks or grazing (26). Meals also give a framework for the repeated, neutral exposure that is necessary for learning to like unfamiliar food (27).

Our study has limitations. Participants were older and at high risk for CVD and nearly 55% had diabetes mellitus; therefore, the results cannot be extrapolated to other populations. Another limitation relates to the potential measurement error in the FFQ that we used, which may be subject to recall bias. In addition, ecSI validation was with a relatively risk-free, younger sample (median age 36 y) (3). However, because 9% of the validation sample was older than 55 y and 38.8% reported choosing foods modified or restricted in fat, sodium, or sugar and 23.2% followed medically recommended dietary restrictions, an assumption of ecSI generalizability extended ecSI score meaning to this older sample at risk for CVD.

In conclusion, competent eaters consume a more healthful diet and have reduced CVD risk and a lower BMI. These relationships persist within the context of the Mediterranean diet. Given these results, it appears that in this setting, rather than teaching mostly food selection and portion size, public health would be well served by emphasizing nutrition education focused on ecSatter, i.e. enhance the dignity and importance of eating; emphasize providing, not depriving; address feelings and encoded messages; teach food acceptance skills; coach internal regulation of intake and sensitivity to eating rhythms; address weight management decisions; stress family meals and define meals in achievable ways; and join individuals where they are in the process, trusting the natural human tendency to grow and learn (28).

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