Supplemental Table 1- Major food sources of iron, Mg and Zn in the MESA population

Red meat	hamburger; cheeseburger; meatloaf; hash; beef, pork, or lamb steaks; roasts; barbeque or ribs, red meat in stir-fried and other mixed dishes.
Poultry	roasted, broiled, baked, or ground chicken or turkey; fried chicken; poultry in stir-fried and other mixed dishes
Fish	shrimp; lobster; crab; oysters, mussels; tuna; salmon; sardines, other broiled, steamed, baked, or raw fish; fish in stir-fried and other mixed dishes
Whole grain	dark, whole-grain breads or rolls; bran muffins; brown or wild rice; oatmeal; high-fiber cold cereal
Legumes	pea, lentil, black bean, and potajes soups; pinto, black, baked, butter, or red beans; black-eyed peas; refried beans; beans in enchiladas, tamales, tacos, or burritos
Other vegetables	corn, green beans, peas, snow peas, squash, zucchini, asparagus, mixed vegetables, tossed salad with lettuce
Refined-grain bread, rice and pasta	white bread and rolls, white rice, flour or corn tortillas, other hot cereal, noodles or pasta, refined-grain cold cereal

Supplemental Table 2 - HR and 95 % CI for T2D by increasing quintiles of nutrient intake estimates in 4982 MESA participants[1,2]

	Quintiles of energy-adjusted nutrient intake					
	Q1	Q2	Q3	Q4	Q5	*P*-trend
n	996	997	996	996	997	
Heme iron, *mg/d*	≤0.44	0.45 – 0.63	0.64 – 0.80	0.81 – 1.06	≥1.07	
Model 1	1.00	1.03 (0.75,1.43)	0.89 (0.63,1.25)	1.03 (0.74,1.44)	1.18 (0.86,1.62)	0.27
Model 2	1.00	1.04 (0.74,1.44)	0.91 (0.64,1.29)	1.07 (0.76,1.53)	1.24 (0.86,1.78)	0.21
Non-heme iron, *mg/d*	≤ 8.5	8. 6 – 9.9	10.0 – 11.3	11.4 – 13.3	≥ 13.4	
Model 1	1.00	1.04 (0.75,1.44)	1.08 (0.77,1.51)	1.07 (0.75,1.52)	1.16 (0.80,1.70)	0.44
Model 2	1.00	1.05 (0.75,1.47)	1.08 (0.76,1.53)	1.08 (0.74,1.57)	1.24 (0.82,1.89)	0.31
Zinc, *mg/d*	≤ 6.7	6.8 – 7.6	7.7 – 8.4	8.5 – 9.7	≥ 9.8	
Model 1	1.00	1.51 (1.08,2.11)	1.65 (1.18,2.32)	1.55 (1.11,2.17)	1.15 (0.80,1.63)	0.71
Model 2	1.00	1.58 (1.10,2.26)	1.75 (1.20,2.56)	1.72 (1.15,2.58)	1.41 (0.88,2.27)	0.33
Magnesium, *mg/d*	≤ 206	207 – 237	238 – 263	264 – 299	≥ 300	
Model 1	1.00	0.95 (0.69,1.33)	0.90 (0.64,1.27)	0.95 (0.66,1.38)	0.79 (0.53,1.18)	0.27
Model 2	1.00	0.95 (0.68,1.34)	0.90 (0.62,1.29)	0.96 (0.64,1.42)	0.77 (0.48,1.22)	0.30
Vitamin C, *mg/d*	≤ 57	58 – 80	81 – 103	104 – 135	≥ 136	
Model 1	1.00	0.81 (0.59,1.12)	0.88 (0.63,1.23)	0.77 (0.55,1.09)	0.94 (0.65,1.34)	0.87
Model 2	1.00	0.81 (0.58,1.13)	0.90 (0.65,1.27)	0.75 (0.53,1.08)	0.91 (0.63,1.32)	0.75
Vitamin E, *mg/d*	≤ 7.3	7.4 – 8.7	8.8 – 10.0	10.1 – 12.3	≥12.4	
Model 1	1.00	1.19 (0.88,1.61)	0.76 (0.55,1.06)	0.84 (0.61,1.16)	0.84 (0.61,1.15)	0.11
Model 2	1.00	1.16 (0.85,1.59)	0.76 (0.53,1.08)	0.84 (0.58,1.20)	0.82 (0.53,1.27)	0.24
β-carotene, *mg/d*	≤ 1.61	1.62 – 2.34	2.35 – 3.29	3.30 – 4.74	≥4.75	
Model 1	1.00	0.89 (0.64,1.24)	0.97 (0.70,1.35)	1.22 (0.88,1.69)	0.85 (0.57,1.25)	0.78
Model 2	1.00	0.87 (0.62,1.21)	0.93 (0.66,1.31)	1.19 (0.85,1.67)	0.81 (0.54,1.21)	0.64

[1] Values are hazard ratios and 95% CI for risk of T2D according to quintiles of micronutrient intakes

[2] Statistical model 1 was adjusted for energy intake (kcal/d), age(y), sex, race-ethnicity (non-Hispanic Whites, African Americans, Hispanics and Chinese-Americans), education (<high school, high school, >high school) study center, alcohol intake (g/d), physical activity (active and inactive leisure in metabolic equivalents per min/wk), BMI (kg/m^2), fiber intake (g/d), cigarette smoking (never, current or former smoker), dietary supplement use (>1/wk, yes or no); statistical model 2 was adjusted for all variables in Model 1 + ratio of polyunsaturated fat intake to saturated fat intake and mutual adjustment for Mg, Zn, heme iron, non-heme iron and antioxidants intake.

Supplemental Table 3 - HR and 95% CI for T2D by increasing quintiles of heme iron and Zn intake estimates in 4982 MESA participants, stratified by food source[1,2]

	Quintiles of energy-adjusted nutrient intake					
	Q1	Q2	Q3	Q4	Q5	*P*-trend
n	996	997	996	996	997	
Heme iron from red meat, *mg/d*	≤ 0.18	0.19 – 0.30	0.31 – 0.41	0.42 – 0.58	≥0.59	
Model 1	1.00	1.10 (0.80,1.51)	1.15 (0.83,1.59)	0.94 (0.68,1.31)	1.07 (0.78,1.47)	0.93
Model 2	1.00	1.06 (0.83,1.35)	1.17 (0.92,1.50)	1.27 (1.00,1.61)	1.22 (0.94,1.58)	0.94
Heme iron from poultry and fish, *mg/d*	≤ 0.15	0.16 – 0.26	0.27 – 0.36	0.37 – 0.52	≥0.53	
Model 1	1.00	0.92 (0.66,1.29)	1.06 (0.76,1.47)	1.00 (0.71,1.40)	1.16 (0.83,1.60)	0.27
Model 2	1.00	0.98 (0.69,1.38)	1.10 (0.78,1.55)	1.02 (0.72,1.45)	1.25 (0.88,1.77)	0.17
Zinc from red meat, *mg/d*	≤ 0.54	0.55 – 0.89	0.90 – 1.19	1.20 – 1.68	≥1.69	
Model 1	1.00	1.13 (0.83,1.55)	1.00 (0.71,1.40)	1.03 (0.74,1.43)	1.11 (0.81,1.52)	0.64
Model 2	1.00	1.12 (0.81,1.56)	0.99 (0.69,1.42)	1.03 (0.72,1.49)	1.11 (0.76,1.62)	0.67
Zinc from other sources, *mg/d*	≤ 5.53	5.54 – 6.41	6.42 – 7.19	7.20 – 8.41	≥8.42	
Model 1	1.00	1.43 (1.02,2.00)	1.50 (1.06,2.13)	1.84 (1.31,2.59)	1.07 (0.74,1.54)	0.92
Model 2	1.00	1.47 (1.03,2.10)	1.64 (1.13,2.39)	1.91 (1.29,2.83)	1.31 (0.82,2.10)	0.43

[1] Values are hazard ratios and 95 % CI for risk of T2D according to quintiles of micronutrient intakes

[2] Statistical model 1 was adjusted for energy intake (kcal/d), age(y), sex, race-ethnicity (non-Hispanic Whites, African Americans, Hispanics and Chinese-Americans), education (<high school, high school, >high school) study center, alcohol intake (g/d), physical activity (active and inactive leisure in metabolic equivalents per min/wk), BMI (kg/m^2), fiber intake (g/d), cigarette smoking (never, current or former smoker), dietary supplement use (>1/wk, yes or no); statistical model 2 was adjusted for all variables in Model 1 + ratio of polyunsaturated fat intake to saturated fat intake, Mg, non-heme iron, antioxidants intake and mutual adjustment for total Zn, total heme iron intake.