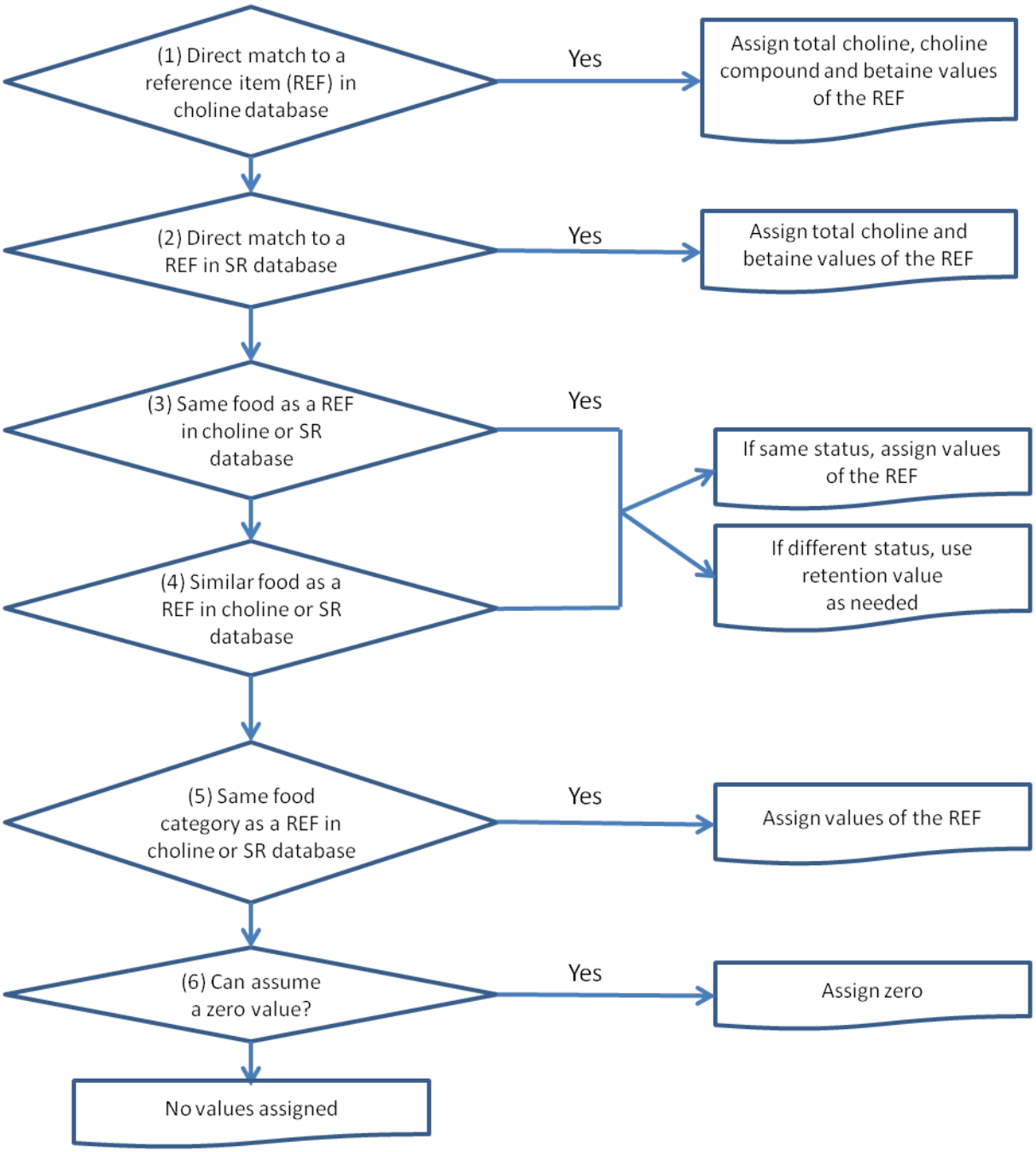
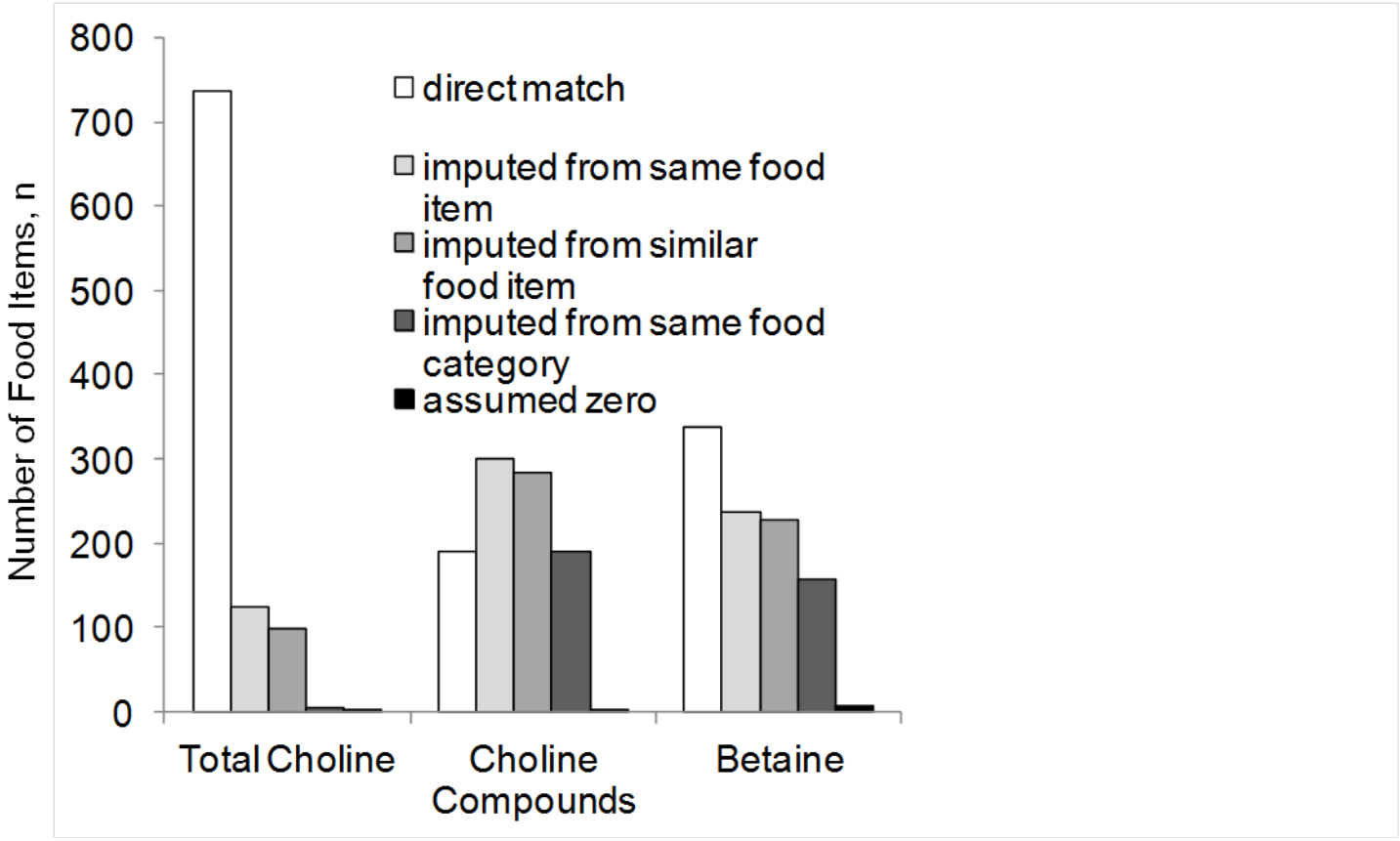
Supplemental Figure 1. Diagram showing the decision-making algorithm used to assign choline and betaine values to food items in the Multiethnic Cohort Food Composition Database (MEC FCD) based on the similarity to the food items listed in reference food composition databases. Abbreviations: choline database refers to the *USDA Database for the Choline Content of Common Foods* (Release Two (2008)); SR refers to the *USDA National Nutrient Database for Standard Reference* (Release 20 (2007)).



Supplemental Figure 2. Methods of assigning choline, choline-containing compound and betaine values to food items in the food composition database for the Multiethnic Cohort quantitative Food Frequency Questionnaire



Supplemental Table 1. Comparison of mean (± standard deviation, mg/d) dietary choline and betaine intake levels reported in large prospective studies of healthy adults

	Multiethnic Cohort (n=85,784 men)	Multiethnic Cohort (n=102,363 women)	Nurses' Health Study(1) (n=39,246 women)*†	Framingham Offspring Study(2) (n=1,960 men / women)†	Atherosclerosis Risk In Communities (ARIC) Study(3) (n=14,430 men / women)
Country	U.S.		U.S.	U.S.	U.S.
% Caucasians	25%		>90%	~100%	73%
Year of Assessment	1993-1996		1984	1991-1994	1987-1989
Age at Assessment	45-75		38-63	28-82	45-64
Assessment Instrument	FFQ (>180 items)		FFQ (~130 items)	FFQ (~130 items)	FFQ (66 items)
Choline – Total	372 ± 187	304 ± 153	331 ± 80	313 ± 61	332 ± 125 / 294 ± 112
Free choline	93 ± 56	75 ± 39	71 ± 16	77 ± 19	-
Glycerophosphocholine	61 ± 37	49 ± 28	49 ± 20	54 ± 21	-
Phosphocholine	14 ± 8	14 ± 8	14 ± 5	14 ± 5	-
Phosphatidylcholine	184 ± 104	149 ± 85	179 ± 64	150 ± 43	-
Sphingomyelin	20 ± 12	16 ± 10	18 ± 6	18 ± 6	-
Betaine	154 ± 96	128 ± 80	189 ± 97	208 ± 90	118 ± 55 / 102 ± 47

Abbreviations: FFQ (semiquantitative or quantitative food frequency questionnaire)

* Only a subgroup (n=39,246 out of 121,700) with colon endoscopy information

† Estimated with adjustment for energy intake using the regression-residual method

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