Using the Folate and Folic Acid Variables in the WHI FFQ Data

Folate is present in foods in two forms: 1) a naturally occurring form (typically called "folate") and 2) a synthetic form (typically called "folic acid"). The latter is added to foods in fortification and in dietary supplements. The two forms have different bioavailabilities and function somewhat differently in the body. Hence, it is important to distinguish the sources of folate.

Variables in the FFQ Data:

F60FLNAT [Dietary Natural Folate (Food Folate)]

- Folate from natural sources only, such as fruit, vegetables, liver, egg

F60FLSYN [Dietary Synthetic Folate (Folic Acid)]

- The enriched/fortified portion in food (post 1997-8).
- This variable is largely overestimated for women who completed the FFQ prior to fortification of foods in 1997-8. Recommend not using as is, especially for baseline FFQs since most were completed before fortification.

F60FOLA

- Recommend not using F60FOLA in analysis of FFQ data.
- Can be used to identify FFQs that were completed prior to 8/1/1997 (i.e., prior to fortification in 1997-8). For FFQs completed prior to 8/1/1997, this variable was computed so that F60FOLA=F60FLNAT.

F60FLDEQ [Dietary Folate Equivalents (DFE)]

- Combines synthetic folic acid and natural folate but takes into account the lower bioavailability of natural folate. [µg of food folate + (1.7 x µg folic acid)]
- This variable is largely overestimated for women who completed the FFQ prior to fortification of foods in 1997-8. Recommend not using as is, especially for baseline FFQs since most were completed before fortification.

Computing variables for data analysis:

For women with FFQ completed after 8/1/1997, F60FLNAT + F60FLSYN = Total folate, or the sum of natural folate + synthetic folic acid consumed. However the simple sum does not account for the differential bioavailability of the synthetic folic acid. Computation of the Dietary Folate Equivalents (DFE) will estimate this.

To compute estimates of the DFE that appropriately consider date of FFQ completion:
- If F60FLNAT=F60FOLA, then set DFE = F60FLNAT
- Otherwise, set DFE = F60FLDEQ

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