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**Science and Pseudoscience in Adult Nutrition Research and Practice**

News & Comment

Reynold Spector

Volume 33.3, May / June 2009

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*Human nutrition research and practice is plagued by pseudoscience and unsupported opinions.*

*A scientific analysis separates reliable nutrition facts from nutritional pseudoscience and false opinion.*

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**1 Tip for Weight Loss:**



**Lose inches off your stomach every month by changing 3 things you eat.**

**MORE INFO**

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In recent years, nutrition research and practice have lagged behind many other biological and medical fields.<sup>1-5</sup> In part, this lag is due to many pseudoscientific beliefs and practices mistakenly regarded as being based on scientific methods.<sup>1-5</sup> By nutrition I mean all the foods, fluids, and “natural” supplements humans ingest.<sup>1,2</sup> By pseudoscience, I mean the use of inappropriate methods that frequently yield wrong or misleading answers for the type of question asked. In nutrition research, such methods also often misuse statistical evaluations.<sup>4</sup> My purpose here is to definitively (wherever possible) or tentatively (where the data are incomplete or nonexistent) answer a series of key questions about adult human nutrition using relevant rigorous scientific principles and methods. The data clearly show that much current advice about dietary pyramids, food supplements, megavitamins, and weight loss regimens is frequently unproven, erroneous, or even harmful and is often based on pseudoscience or derivative incorrect professorial opinion.<sup>1-7</sup>

But before coming to the answers, we should frame the general questions precisely:

1. What do we know about adult human nutrition that meets the standards for truth?
2. Is there an optimum body weight? Is the ancient wisdom of Aristotle correct? He preached a sound mind in a sound body and, most importantly, moderation in all things, including diet. Or are current (immoderate) claims that large amounts of certain nutrients (e.g., vitamins, lycopene, fruits, and vegetables) and avoidance of others (e.g., saturated fats like butter, rapidly absorbed carbohydrates like rice and potatoes) the “way” to prevent bodily harm and promote health?<sup>2,3,6, 7</sup>
3. Why are there so many confusing or contradictory data and opinions in the literature, news media, and books on the following points?<sup>2,1-5</sup>
  - o Are food supplements such as megavitamins—defined as greater than five times the recommended daily allowance (RDA)—helpful? Specifically, are megavitamins E, C, and carotene healthful or harmful? That is, will they prevent disease and aging alone or in combination? Is there even one supplemental nutrient (nutraceutical) proven to prevent disease and possibly prolong life?
  - o Are certain common foods (in moderation) harmful? For example, are dietary saturated fats really harmful? Or are such fats useful fuel burned in the body to harmless carbon dioxide and water to provide energy as described in the biochemistry textbooks? Are processed rice and potatoes really bad for you? Do rice and potatoes really strain insulin production by the pancreas and lead to diabetes as alleged?<sup>6</sup> Or are rice and potatoes a reasonable source of calories ingested by billions without harm? In other words, are there some nutrients that can cause disease and others that can prevent disease and illness?<sup>1,2,6</sup> Are there “fountain of youth” nutritional approaches or do the body’s homeostatic mechanisms counteract “over-

**Reynold Spector**

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