

Perspective: Reductionist Nutrition Research Has Meaning Only within the Framework of Holistic and Ethical Thinking

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ABSTRACT

Today, it seems that nutrition is in a state of great confusion, especially for the general public. For decades, some nutrients (e.g., cholesterol, saturated fats, sugars, gluten, salt) and food groups (e.g., dairy, cereals, meats) have been regularly denigrated. In this position paper, we hypothesize that such a state of confusion is mainly the result of the reductionist paradigm applied to nutrition research for more than a century, and by being pushed to its extreme, this perspective has led to accusations about some nutrients and foods. However, the real issue is about foods taken as a whole and therefore about their degree of processing, which affects both the food matrix and composition. Indeed, we eat whole foods, not nutrients. Therefore, the objectives of this article are to emphasize the need for more holistic approaches in nutrition to preserve our health, animal welfare, and planet. We propose to first redefine the food health potential on a holistic basis and then to show that reductionism and holism are interconnected approaches that should coexist. Then, we try to explain how extreme reductionism has been disconnected from reality and ethical considerations and has ultimately led to environmental degradation and loss of biodiversity, notably through very specific crops, and to an increased prevalence of chronic diseases. Furthermore, to address the confusion of the general public and to simplify nutritional messages, we propose 3 holistic golden rules based on scientific evidence to protect human health, animal welfare, and the environment (climate and biodiversity). Finally, we try to show how these 3 rules can be easily applied worldwide while respecting the environment, cultural traditions, and heritage. *Adv Nutr* 2018;9:655–670.

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Introduction

We eat foods, not nutrients. However, nutrients are regularly recommended to sell foods or are incorporated into national guidelines. “Eat less fat, salt, and sweets” is a well-known recommendation. In advertising, it is often the case to read: “rich in fiber, antioxidants, vitamins, minerals,” “low fat,” “reduced salt,” etc. On packaging labels, the only scientific information is that of nutrient composition, expressed by servings or on a 100-g basis. Nutrients and calories seem interchangeable from one food to another. This approach is called nutritionism or nutritional reductionism (1).

Gyorgy Scrinis (1) is probably the first to have clearly described and thoroughly analyzed the reductionist thinking in the nutritional sciences. Overall, he divided nutrition science into 3 eras since the beginning of research in nutrition, in ~1850: 1) the era of “Quantifying Nutritionism” (1850–1960s), controlled by research scientists who discovered and

quantified nutrients, and human nutritional needs, notably leading to the prevention of nutritional deficiencies; 2) the era of “Good-and-Bad Nutritionism” (1960s–1990s), controlled by governmental bodies to prevent chronic diseases, with good and bad nutrients to be limited or encouraged, but negative messages dominated; and 3) the era of “Functional Nutritionism” (1990s until today), controlled by the agro-food industry with more positive messages for body health and a focus on functional nutrients.

However, despite the vast knowledge in nutrition science, the prevalence of chronic disease continues to dramatically increase worldwide, with the WHO predicting that type 2 diabetes will be the seventh cause of death worldwide by 2030 (2). Did we fail somewhere or do we truly lack more knowledge? In addition, the general public is in a state of great confusion about nutrition recommendations or guidelines. We first accused fat (notably cholesterol and SFAs) as a cause of cardiovascular diseases; then, sugars were thought to increase the prevalence of obesity and type 2 diabetes; then, salt was linked to hypertension; and today, some reject gluten, cereals, dairy, etc., advocating

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