

Editorial

Taking Highly Palatable Food or Naively Consuming Fatal Toxic Diet

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“Phosphorus is an essential nutrient required for critical biological reactions that maintain the normal homeostatic control of the cell. This element is an important component of different cellular structures, including nucleic acids and cell membranes”¹.

Dietary consumption phosphorus ostensibly endures increasing because of the mounting intake of exceeding factory-processed foods, particularly cafeteria meals, fast foods, and convenience-store foods^{2,3}. It has been reported that taking factory-processed fast-foods often increases mortality even more than cigarette smoking⁴⁻⁶. High consumption of Sodium (Na⁺), low portion of whole grains in the diet, and almost no or very-low fruits are the critical nutritional hazard issues responsible for premature deaths and DALYs in several countries around the globe⁶⁻⁸. Globally, obesity and diabetes mellitus have been increasing dramatically to an epidemic proportion over the past 3-4 decades^{9,10}. Multiple

studies reported increased obesity, diabetes mellitus, bad oral health, fatty liver, and gout, probably due to increased sugar consumption¹¹⁻¹³. Additionally, sugar-sweetened-beverages (SSBs) consumption has cumulative health hazards and often leads to several health conditions, including malnutrition, obesity, type 2 diabetes, cardiovascular diseases (CVDs), and oral disease¹⁴⁻¹⁶. Thereby, the World Health Organization (WHO), the Scientific Advisory Council on Nutrition, the Dietary Guidelines Advisory Committee 2015, and the American Heart Association, have endorsed substantial limitations on the upper limits of sugar consumption^{10,17,18}. So far, current understanding regarding dietary and nutritional hazard principally about high consumption high Na⁺ and sugar intake¹⁹⁻²³. Additionally, communities of low-and-middle-countries (LMICs) suffer predominantly low-level trace elements and micronutrients^{24,25}. Nevertheless, phosphate is one of the rare trace elements around the globe consumed by us in high amounts^{1,26-28} [Figure 1].

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Figure 1: High Sugar Consumption and Health Consequences.

The two-core basis of dietetic phosphorus is **i.** organic, with animal and vegetarian proteins, and **ii.** inorganic, frequently food preservers^{27, 29-32}. Animal-rooted nutrients and plants are plentiful in organic phosphorus³³. Typically, 40-60% of animal-based phosphorus is absorbed; this fluctuates by the degree of vitamin-D activity in the intestine. However, plant phosphorus, frequently related to phytates, is a smaller amount absorbed by the human gastrointestinal tract^{29, 34-36}. As high as 100% of inorganic phosphorus/phosphate is used as a preservative in the factory-processed diets has been observed^{29, 37, 38}. Multiple studies revealed that several inorganic phosphate compounds are expansively used as a preservative and a flavor enhancer in the factory-processed Western

diets^{39, 40} Phosphorus-containing processed Western diet, mainly include, e.g., milk and dairy products, predominantly processed cheese-based meals, baked (dough) foods, meat products, and sugar-sweetened/diet beverages/alcoholic beverages, and many more^{36, 41-43}. Furthermore, it is appraised that amid 40-96% of the extreme popular grocery diets, including cola drinks, prepared frozen foods, dry food mixes, packaged meat, bread, and bakery foodstuffs, also contain inorganic phosphates as a preservative and taste enhancer^{44, 45}. Phosphate-containing preservatives aid many critical issues for the food trade. These include pH equilibrium, metal cation sequestration, emulsification, fermentation, retain moisture, antimicrobial effects, etc.³⁶. These chemical properties of inorganic phosphate preservation make food more palatable. Henceforward, as high as 25% of the United States population, it was reported that they regularly take inorganic phosphate three to fourteen times higher than the recommended amount^{27, 36, 46, 47}. Thereby, frequent consumption of inorganic phosphate (as preservatives), especially with factory-processed food and its more than usual level in the blood, has multiple correlations with many pathophysiological health consequences among compromised renal function patients and healthy individuals^{2, 48-50} [Figure 2].

Additionally, several studies reported that processed food (containing inorganic phosphates) as preservative) consumption is correlated to several non-communicable diseases, such as type II diabetes, hypertension, muscular including cardiac

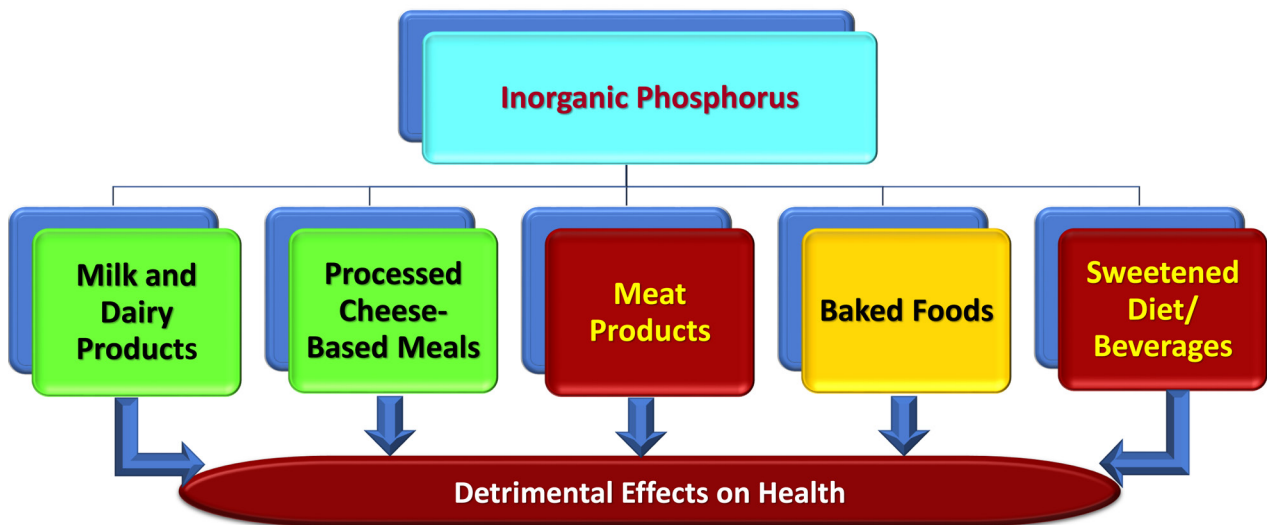


Figure 2: Inorganic Phosphorus Acting as Health Hazard on Consumption of Common Food Products.

muscle dysfunction, obesity, and some cancers, and globally increasing incidence^{49, 51-56}. Moreover, it is not easy to minimize inorganic phosphate levels in food-preservatives as per food-industry regulation regarding processed foods. Meanwhile, present regulation categorizes Na⁺ and phosphorus-containing food preservatives as commonly considered benign for the public ingesting these food products. After that, they are principally permitting these molecules to be utilized with almost no boundaries by the food processing business. This signifies a foremost barricade in minimizing and controlling the Na⁺ and phosphorus-containing food preservatives³⁶.

Moreover, FDA reorganizes these preservatives as generally recognized as safe (GRAS) food additives by describing as “none of the GRAS phosphates is intrinsically harmful, and their use in foods does not present a hazard when the total amount of phosphorus ingested, and the intakes of calcium, magnesium, vitamin D and other nutrients are satisfactory”³⁶. Afterward, there is an urgent call to build awareness among ordinary people regarding processed food and preservatives. Additionally, policymakers around the globe need to address the burning issue and protect people’s health.

Consent for Publication

All authors reviewed and approved the final version and have agreed to be accountable for all aspects of the work, including any issues related to accuracy or integrity.

Disclosure

The authors declare that they do not have any financial involvement or affiliations with any organization, association, or entity directly or indirectly with the subject matter or materials presented in this article. This also includes honoraria, expert testimony, employment, ownership of stocks or options, patents or grants received or pending, or royalties.

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