IFAC Statement Regarding JAMA Article, "Effect of Food Additives on Hyperphosphatemia Among Patients with End-stage Renal Disease"

A recent study published in the *Journal of the American Medical Association* (JAMA) by Sullivan et al. found that educating patients with end-stage renal disease about limiting the intake of phosphorus-containing foods modestly reduced serum phosphorus levels. Nothing in this short-term study suggests that similarly limiting the intake of phosphorus-containing foods in the general public would have any beneficial effect on healthy individuals.

The seriously ill patients on life sustaining dialysis that were selected for this trial were not able to properly metabolize and eliminate excess levels of various food components, including phosphorus. Humans require a certain level of dietary phosphate for proper functioning of body systems and any phosphorus consumed in foods beyond what the body needs is excreted from the body.

It is well documented that phosphorus is an essential nutrient, critically important for every cell of the body, as it is involved in cell signaling, bone formation, and acid-base regulation. It is important to understand that the predominant mineral in bones is hydroxyapatite, which is a compound that includes both calcium and phosphorus. The presence of both calcium and phosphorus are essential for growth and maintenance of healthy bones.

The study authors incorrectly state that the dietary phosphorus intake of individuals in the United States has been increasing. In the United States, since 1980, the International Food Additives Council (IFAC) has conducted surveys regarding phosphorus added to food which have consistently confirmed that less than 10% of the FAO/WHO's Maximum Tolerable Daily Intake (MTDI) for phosphorus, comes from food additive sources. IFAC data shows no significant increase in phosphate consumption during this time.[1]

There are certain populations in the US who do not consume enough phosphorus on a daily basis. Estimates of usual intakes of phosphorus derived by the Institute of Medicine show a significant proportion of the US population may not be meeting the Reference Daily Intake (RDI) levels for phosphorus.[2] As an additional example, an analysis of the most recent National Health and Nutrition Examination Survey (NHANES) for 2005 and 2006 revealed that at least 10% of boys of age 4-13 years fell below the RDI for phosphorus and at least 25% of women aged 31-70 also did not achieve the RDI for phosphorus.[3] Similar results can be found in earlier NHANES studies covering the years 1999 through 2004.[3] Therefore, consumption of phosphorus through foods is critical to ensure that the RDI is met.

Inorganic phosphates have a long history of safe use as food ingredients. For decades, numerous toxicology studies have examined the safety of phosphate based food additives. These toxicological studies have been reviewed by several panels of internationally recognized experts and form the science upon which worldwide regulatory approval has been granted to phosphate based food additives.

References Cited:

1. IFAC Letter to the FDA; Submitted 1997

2. Institute of Medicine. 1997. “Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride,” National Academy Press, 1997, p. 151-152.
3. National Health and Nutrition Examination Survey (NHANES) 1999–2006, Available at: http://www.cdc.gov/nchs/about/major/nhanes/datalink.htm