Scientific comment on The Scientific Advisory Committee on Nutrition (SACN) consultation on its draft Carbohydrates and Health report—Submitted August 29, 2014, by Christine D. Wu, MS, PhD., Professor, Department of Pediatric Dentistry, College of Dentistry University of Illinois at Chicago, Chicago, IL

"Dried fruits including raisins, dried plums and cranberries, play an important role in children's daily fruit consumption. Because of their stable shelf life and are easy to distribute, they have often been included in school meals menus and considered an efficient way to increase consumption of fruit in children. However, due to the sugar content in dried fruits, the role they play in caloric intake, obesity or tooth decay have been a focus of health professionals.

Oral diseases including dental caries affect more persons than any other single disease in United States. These diseases can significantly impact a person's overall health. Oral pathogenic bacteria may contribute to increased risk of heart attack, stroke, and lung disease and may be associated with premature childbirth in some women. It is known that dental plaque bacteria ferment carbohydrate in the oral cavity and produce acid. A pH of <5.5 is harmful to the tooth enamel and eventually lead to tooth decay. The dietary sucrose, in particular, can facilitate the formation and attachment of the sticky dental plaque on tooth surfaces.

Although sweet tasting dried fruits such as raisins and dried plums are commonly perceived as sticky and retentive, published research at our laboratory has shown that raisins possess phytochemicals that suppress the growth and attachment of dental plaque bacteria in the oral cavity. Studies in adolescents and in children have shown that raisins were less acidogenic than some of the sugar-sweetened snack foods.

Dried plums, fruits of *prunus domestica*, have been part of the human diet since ancient times and have been known to benefit digestive and bone health. Chemical analyses of dried plums demonstrate the presence of dietary fibers, antioxidants, flavenoids, carotenoids and other beneficial phytochemicals. The main sugars found in the sweet tasting dried plums are glucose, fructose, sorbitol and trace amounts of sucrose. During the drying process, all of the sucrose is hydrolyzed to glucose and fructose. The sweet tasting sorbitol, a non-fermentable sugar alcohol in relatively high amounts, remains well preserved during this process.

Like raisins, dried plums contain many beneficial phytochemicals/nutritional components but possess almost twice the amount of antioxidants than raisins. Dried plums contain 40% less sugar per unit weight than raisins and only trace amount of sucrose. In addition, the sweet-tasting sugar alcohol, sorbitol, cannot be metabolized by cariogenic bacteria to produce harmful acid leading to tooth decay. Data obtained from our laboratory showed that phytochemicals in dried plums were capable of suppressing growth of pathogenic oral bacteria. In addition, our soon to be published human study supported by the dried plum industry demonstrated that consumption of dried plums maintained the dental plaque pH above 6, which is not damaging to the tooth enamel. Other test sugary snacks reduced the plaque pH below 5.5.

In conclusioin, in addition to the proven overall health benefits, sweet-tasting dried plums may be a good alternative to candy or other sugary snacks for children as far as obesity and oral health are concerned."