Top Ten Things to Know

Dietary Diversity: Implications for Obesity Prevention in Adult Populations

1. ‘Eat a variety of foods’, or dietary diversity, is widely recommended to promote a healthy, nutritionally adequate diet and reduce risk of major chronic diseases. However, recent evidence from observational studies suggests that greater dietary diversity is associated with suboptimal eating patterns, particularly when the diversity is reflected by a higher intake of processed foods, refined grains, and sugar-sweetened beverages instead of minimally processed foods, such as fish, fruits, and vegetables.

2. This Advisory summarizes the definitions and measures used to describe dietary diversity and reviews the evidence from observational studies on dietary diversity and its relationship with food-based diet quality, body weight and adiposity measures. It also reviews evidence from intervention studies evaluating the influence of dietary variety on dietary factors relevant to obesity including satiation and patterns of food consumption. Finally, it provides recommendations for future research needed to inform dietary guidelines.

3. Observational studies to date do not support benefits of greater dietary diversity for healthy weight or optimal eating pattern.

4. Short-term feeding studies show that exposure to a variety of foods may reduce sensory-specific satiation, thereby increasing energy intake and food consumption in adult populations.

5. Limited evidence from observational studies suggest that greater dietary diversity is associated with greater energy intake, suboptimal eating patterns and weight gain in adult populations.

6. Well-designed prospective studies that assess the relationship between dietary diversity and clinical, metabolic and cardiovascular outcomes are needed, as little is known about how dietary diversity may influence obesity in underserved populations. With the existing cultural variation in eating patterns, it is important to examine dietary diversity in different racial-ethnic and low-income groups, identify potentially vulnerable groups, and inform specific recommendations regarding potential limits to dietary diversity resulting in poor diet quality and weight gain. Additional studies should also evaluate temporal trends, and cultural and socioeconomic determinants of diet diversity.

7. In contrast to the concept of diet diversity, diet quality scores are developed to assess diet healthfulness, i.e. adequate food consumption, typically as defined by dietary guidelines. Higher food-based diet quality scores such as HEI, the Alternative Healthy Eating Index (AHEI) and the Dietary Approaches to Stop Hypertension (DASH) have consistently been associated with lower disease risk. Few previous studies have modified dietary diversity measures to reflect diet quality in addition to, or rather than, diversity.

8. There is a critical need to better understand how specific aspects of dietary diversity may influence food and beverage choices, appetite, satiation, and energy intake, particularly in the long term. Understanding such mechanisms is particularly important to help inform interventions and intentional approaches to eating to promote healthy dietary patterns at appropriate calorie levels, both in healthy and overweight adults.

9. There is a need for standardized, reliable measures defining what diet diversity is, and what aspects of diversity may maximize benefits to health outcomes. This may be achieved by assessing multiple aspects of dietary diversity, defined based on a wide range of foods and food groups, both healthy and unhealthy and evaluating their potential influence on diet quality and health outcomes.

10. Based on the current state of science on dietary diversity it’s appropriate to promote a healthy eating pattern that emphasizes adequate intake of plant foods, protein sources, low-fat dairy products, vegetable oils and nuts while limiting consumption of sweets, sugar-sweetened beverages, and red meats.