

## ASN Publications

### September Media Alert: *Advances in Nutrition*

#### **How Should We Measure Food Security?**

*Review cautions researchers and policy makers to know what they need to measure and to choose measurement tools carefully*

Measuring food security, or food insecurity, is critical. Government agencies, non-profits, and other organizations depend on food security measurements for targeting food and economic aid; informing early famine warning and global monitoring systems; and evaluating nutrition, health, and development programs. Moreover, current estimates and future projections of food security are important drivers of government policy that affect billions of people. The authors of a review published in *Advances in Nutrition*, "[What Are We Assessing When We Measure Food Security: A Compendium and Review of Current Metrics](#)," however, note that measuring food security is complicated by the many approaches and tools for assessing food security. To aid researchers and policy makers, they have reviewed the major food security assessment tools to help us understand what each one actually measures.

Confounding the problem of measuring food security is the issue of simply defining the term: there is no universal consensus, and the definition has evolved over the decades, with earlier definitions focusing primarily on national food supplies. Currently, the most commonly used definition of food security comes from the 1996 World Food Summit: "Food security at the individual, household, national, regional and global levels [is achieved] when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life." Conversely, "food insecurity" is often defined as the absence of one or more of these conditions.

Food security metrics may focus on food availability, access, utilization, stability of food security over time, or some combination of these factors. Moreover, these metrics may draw from data at national, regional, household, or individual levels. The authors note that "the diversity of food security measurement tools currently available provides a rather dizzying array of options, such that it may not always be clear how the measures differ in their conceptualizations of food security and for what purpose a given tool may best be used."

Identifying the intended use of a food security measurement tool and understanding precisely what it measures are critically important for deciding which metric to use for any given purpose, such as determining eligibility for family food assistance programs or stocking grain to manage future contingencies. To help researchers and policy makers, the authors provide a summary table in which they review common food security metrics. Among these metrics are the Global Hunger Index, Global Food Security Index, Famine Early Warning Systems Network, and Food Consumption Score. The authors present information on what these metrics measure, their purpose, data sources, and how these characteristics compare across metrics.

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Despite the many food security measurement tools available, the authors note that some aspects of food security are still not well measured. For example, response bias has not been addressed by most measurement tools, although there is evidence that if respondents expect aid or support based on their responses to food security questions, they may exaggerate their answers.

The authors end by urging food security researchers, programs, and policy makers to carefully assess their information needs and by providing a set of questions to consider that will point them to the most appropriate food security measurement tools.

### **Bariatric Surgery Can Lead to Mineral Malnutrition**

*Review finds adolescents and pregnant women who have had bariatric surgery are particularly vulnerable*

A review published in *Advances in Nutrition*, "[Mineral Malnutrition Following Bariatric Surgery](#)," finds that bariatric surgery often leads to malnutrition. Some nutrient deficiencies that may follow bariatric surgery, such as protein, vitamin B-12, and vitamin D deficiencies, are generally addressed through patient education, routine monitoring, and effective treatment strategies. However, this review finds that little attention is paid to mineral deficiencies following bariatric surgery, including zinc and copper, which if left untreated may have devastating consequences, including hair loss, lowered immunity, anemia, and neuro-muscular disorders.

Bariatric surgery includes a variety of procedures performed on people who are typically moderately to severely obese. Weight loss is achieved by reducing the size of the stomach with a gastric band or through removal of a portion of the stomach or by resecting and re-routing the small intestines to a small stomach pouch. Since 1990, it is estimated that more than 1.4 million people in the United States have undergone bariatric surgery. Research indicates that these procedures are generally successful. With sustained weight loss, individuals who have undergone bariatric surgery often recover from diabetes and significantly reduce their risk of cardiovascular disease.

Despite the advantages, bariatric surgery does pose risks, most notably malnutrition. Following surgery, patients are less able to digest and absorb nutrients and may develop food intolerances. Follow-up studies indicate that up to 82% of bariatric surgery patients have suffered from nutrient deficiencies. Some nutritional complications are well known to the surgeons and other health care practitioners who provide postoperative support to patients. However, with many other nutrients, including essential minerals, awareness of the risk of deficiency by patients and health care providers is low. As a result, prophylactic protocols and monitoring are insufficient, leading to debilitating consequences, including long-term disability.

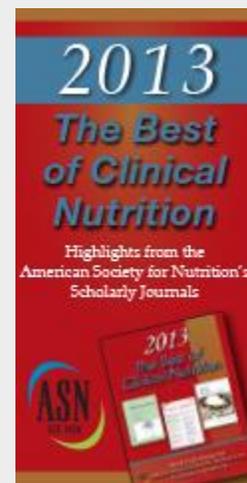
This review reports on the results of studies of malnutrition following bariatric surgery in calcium and vitamin D, iron, copper, and zinc. In one study, for example, researchers found that iron deficiency increased from 5 to 22% following bariatric surgery. Deficiencies in copper and zinc are particularly difficult to diagnose as laboratory tests often don't detect them due to confounding factors, and the signs and symptoms of copper and zinc deficiencies are shared with deficiencies in other nutrients.

Mineral malnutrition is particularly worrisome among special populations, such as adolescents and pregnant women and their fetuses, who may be at risk for developmental problems that affect physical and mental function. Although adolescents represent fewer than 1% of all bariatric surgeries performed to date, that percentage is expected to rise given the dramatic increase in pediatric obesity.

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In conclusion, the authors of this study note, "the benefits of bariatric surgery are tempered by the high frequency of nutritional deficiencies that occur, some of which are under-recognized and left untreated and lead to devastating consequences to bone health and to the functioning of the immune, nervous, and muscular systems." The authors call for additional research to optimize nutritional outcomes following bariatric surgery.

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