

Chapter 26

Care of the Food Insecure Patient

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Objectives

- Contrast food insecurity and hunger.
- Discuss coping strategies associated with food insecurity that complicate disease management.
- Identify risk factors for food insecurity and describe its epidemiology.
- Discuss the nutritional, behavioral, and mental health impacts of food insecurity.
- Identify challenges to providing care to food insecure patients and strategies that can help address these challenges in the clinical setting.

Ms. Walker is a 48-year-old woman with a history of diabetes, hypertension, obesity, and depression. Her last hemoglobin A_{1c} was 9.0%. She seems poorly engaged with her diabetes care, taking her medications intermittently, and infrequently adhering to a diabetic diet. She tells you that she frequently has difficulty making ends meet. Sometimes, rice is the only food she can afford to eat. You suspect her food insecurity is complicating her diabetes management.

INTRODUCTION

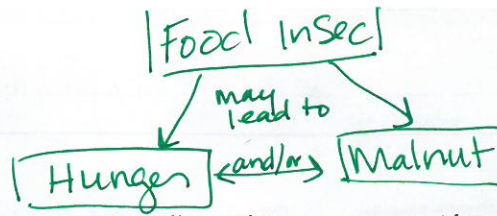
Food insecurity, or the inability to reliably access safe and nutritious food, has important health consequences. Food insecurity has an impact on health through nutritional, behavioral, and mental health pathways. Food insecure children and adults have higher rates of acute and chronic illness and higher health-care utilization. Management of chronic, diet-sensitive diseases, such as obesity, diabetes, and congestive heart failure, is particularly challenging in the context of food insecurity. This chapter explores the complicated relationships between food insecurity and

illness with a focus on the issue in the United States and presents strategies to improve the care of food insecure patients.

DEFINITION AND PATTERNS OF FOOD INSECURITY

The most commonly accepted definition of food security and food insecurity comes from a 1990 report by the Life Sciences Research Office (LSRO)¹:

Food security was defined ... as access by all people at all times to enough food for an active, healthy life and includes at a minimum: a) the ready availability of nutritionally adequate and safe foods, and b) the assured ability to acquire acceptable foods in socially acceptable ways (e.g., without resorting to emergency food supplies, scavenging, stealing, and other coping strategies). Food insecurity exists whenever the availability of nutritionally adequate and safe foods or the ability to acquire acceptable foods in socially acceptable ways is limited or uncertain.



In the United States, food insecurity generally implies that access to adequate food is limited by a lack of money and other resources. Globally, food insecurity may be due to other factors such as political unrest. The United Nations' Food and Agriculture Organization defines food security as existing "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." Food must be consistently available, accessible, and useable.²

DISTINGUISHING FOOD INSECURITY AND HUNGER

Food insecurity is a concept distinct from the physical sensation of hunger. According to the LSRO,¹ "Hunger (in its meaning of the uneasy or painful sensation caused by a lack of food) and malnutrition are potential, although not necessary, consequences of food insecurity." Although the term "food insecurity" may obscure the tragedy of hunger, the term includes the coping strategies that households employ to avoid the physical sensations of hunger. Understanding these strategies makes clear the health and public health consequences of food insecurity (Box 26-1).

PATTERNS OF FOOD INSECURITY

Every year in the United States, the Department of Agriculture reports the prevalence of three categories of food security: food security, low food security, and very low food security.³ Households with low or very low food security

Box 26-1. Food Insecurity Coping Strategies

Shifting dietary intake to low-cost, highly filling foods (such as refined carbohydrates).

- Reducing dietary variety.
- Binge eating and avoiding food waste when food is available.
- Skipping meals or reducing dietary intake when food is unavailable.
- Shopping strategies to improve the affordability of food (buying produce in season, using coupons, taking advantage of sales, etc.).
- Enrollment in federal nutrition programs (such as the Supplemental Nutrition Assistance Program (SNAP, formerly called "Food Stamps"); the National School Lunch Program (NSLP); or the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC).
- Utilizing the hunger safety net, which includes food pantries; soup kitchens; community dining; and less formal food support from religious institutions, friends, and family.

are considered "food insecure." In general, people living in households with low food security report difficulty accessing food and the need to reduce diet quality in order to compensate for inadequate food budgets, but typically have not reduced their quantity of food. People living in households with very low food security experience reductions in their food intake and disruption of their normal eating patterns because of a lack of money or other resources for food.

In the developed world, and often in the developing world as well, food insecurity is cyclic and episodic. That is, episodes of food adequacy are punctuated by discrete episodes of food scarcity because of particular economic stresses. Households may confront an episode of food scarcity resulting from a variety of life stressors: for example, periodic, unforeseen expenditures (such as an acute medical condition or a car repair); an increase in necessary household expenditures (such as the need for heating in the winter, or to feed children in the summer when school-based access to free or reduced-price lunch declines); or, predictably at the end of the month, if household income is not adequate to cover food requirements.⁴

The typical food insecure household in the United States experiences food scarcity during 7 months of the year, with each episode lasting for a few days.³ The cyclic nature of food scarcity in the food insecure household and its resulting fluctuations in dietary intake make clinical care of food insecure patients with chronic disease particularly challenging.

EPIDEMIOLOGY

In 2013, one in seven US households (or 14.3% of all households) reported food insecurity. These households included 33.3 million adults and 15.8 million children, of whom 12.2 million adults and 765,000 children lived in very low food secure households.³ In safety-net outpatient institutions in the United States (such as Federally Qualified Health Centers), the prevalence of food insecurity often approaches 50%.

Worldwide, 842 million people (one-eighth of the world population) are estimated to be food insecure,⁵ with the vast majority living in developing regions. As poverty has declined and food production increased over the past several decades, the global burden of food insecurity has declined (Figure 26-1).

RISK FACTORS FOR FOOD INSECURITY

Ms. Walker has two children at home and is divorced. She works the night shift in a 24-hour diner. She tells her primary care provider (PCP) that she has difficulty balancing her work with parenting. In particular, she is finding it difficult to purchase and prepare healthful food. When her food budget is particularly short, she serves her children first and eats herself only what is left over. She has recently started smoking again, which she says helps her cope with the stress.

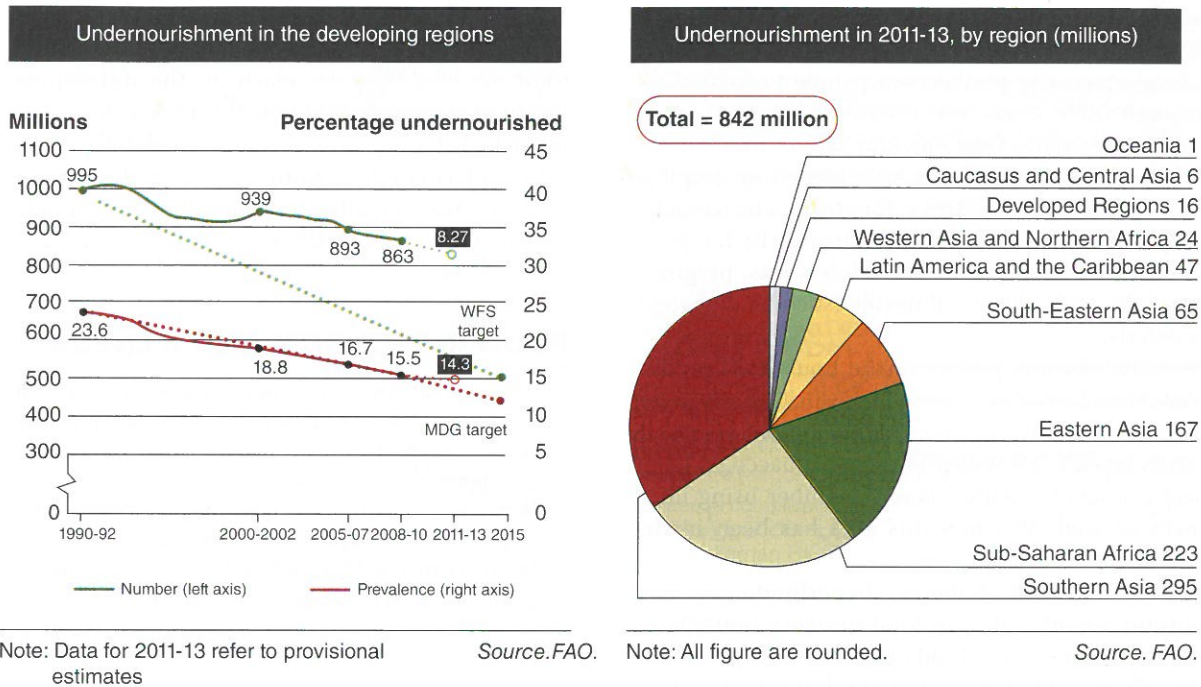


Figure 26-1. Left: Undernourishment in the developing regions: actual progress and target achievement trajectories toward the MDG and WFS targets. The estimated number of undernourished people has continued to decline; however, the rate of progress is insufficient to reach MDG and WFS goals for hunger reduction. Right: The changing distribution of hunger in the world: number and share of undernourished by region, 2011–2013. Overall, there has been a reduction in the number of undernourished people over the past two decades; different rates of progress across regions have led to changes in the distribution of undernourished people in the world. Most of the world's undernourished people are found in Southern Asia, closely followed by sub-Saharan Africa and Eastern Asia. MDG, Millennium Development Goal; WFS, World Food Summit. (Adapted from FAO, IFAD and WFP. *The State of Food Insecurity in the World. The Multiple Dimensions of Food Security*. Rome: FAO, 2013.)

The root causes of food insecurity are highly complex and include both personal vulnerabilities (individual risk factors) and structural factors.⁶

INDIVIDUAL RISK AND RESILIENCE FACTORS FOR FOOD INSECURITY

In the United States, the strongest risk factors for food insecurity include having children in the household, low household income, and racial/ethnic minority status (black or Latino).¹ Single-parent households are at the highest risk for food insecurity. More than a third of all households with children headed by a single woman in the United States are food insecure.

Although poverty is highly associated with food insecurity, it is not synonymous with food insecurity. Almost 60% of households with incomes below the US federal poverty level in 2012 did *not* report food insecurity, while almost 7% of households with incomes greater than 185% of the US federal poverty level did report food insecurity.¹ Food insecure households are more likely to have experienced a recent event stressing the household budget, such as loss of employment, addition

of a household member, or reduced access to federal nutrition benefits.^{2,7} In addition, some households have specific financial obligations that drain money from food budgets. For example, many immigrant households regularly send money to their country of origin to support family members (see Chapter 29). Other households must shoulder high out-of-pocket health-care expenditures.

Food insecure households report difficult financial choices between paying for food and paying for health care, utilities, transportation, housing, and education. Why are these necessities frequently prioritized over food? First, money that might otherwise be saved for food purchases in the near future are often deferred to other needs because food expenditures can be spread throughout the month. Second, the presence of a safety net for food (relatives/friends, food pantries, etc.) may allow for prioritization of other expenses. Finally, the ability to reduce food budgets by reducing food quality allows flexibility in the food budget that is not present in other parts of the budget.

Mental illness, tobacco use, and chronic illness place people at risk for food insecurity. Mental illness is tightly

associated with food insecurity across the lifespan. It is likely that this relationship is bidirectional. In other words, food insecurity predisposes people to mental illness through both stress and micronutrient deficiency pathways; at the same time, mental illness predisposes people to food insecurity through its impact on employability and high-level executive function. The association between mental illness and food insecurity has been well documented among children, adolescents, pregnant women, adults with chronic illnesses (such as diabetes), and the elderly.

Tobacco use by any person in the household predisposes the entire household to food insecurity, both in the United States and globally.¹ This “crowding out effect,” in which food income is used to purchase tobacco, is likely to impact households with a family member using illicit substances as well, although this area has been inadequately studied.^{8,9}

The prevalence of diabetes, hyperlipidemia, and hypertension are all higher in food insecure households than in low-income households that are not food insecure.³ Members of food insecure households that include chronically ill members often choose between paying for food and paying for health-care expenses. For example, two-thirds of food pantry clients in the United States report having to choose between buying food and medical care.¹⁰ These competing demands help explain the high rate of medication nonadherence observed in food insecure households.¹¹⁻¹³

There are also factors that protect families against food insecurity even in the context of poverty. Although enrollment in federal nutrition programs such as SNAP is not adequate to pull many households out of food insecurity, they do reduce the depth and duration of food scarcity episodes. Financial skills (such as managing bills, making a budget, stretching groceries), knowledge of community resources for food assistance, and cooking skills also protect against food insecurity.¹⁴

STRUCTURAL FACTORS INFLUENCING FOOD INSECURITY

Policies that reduce the need for high expenditures in other parts of the budget allow households to avoid food insecurity. In the United States, for example, states with high food insecurity rates also have low average wages and high unemployment, high housing costs, low participation in federal nutrition programs, and a high tax burden on low-income households.¹⁵ Policy changes that relieve the budgets of poor households (e.g., access to affordable housing and health care, livable minimum wage) are likely to reduce food insecurity rates.

Besides these economic factors, ecological factors are also important drivers of food insecurity.⁶ For example,

drought, flooding, and other natural disasters can have important consequences for food prices and regional food availability, particularly in the developing world. Political instability and social unrest can have an acute impact on food prices and food availability, and chronically undermine food availability by reducing investment in agriculture. Finally, the volatility of food prices affects the degree to which the poor, in particular, are able to access food.

FOOD INSECURITY AND ILLNESS

Ms. W. visits the emergency department with a blood glucose level of 45 mg/dL and has multiple other episodes of hypoglycemia not requiring emergency department management. She is not regularly checking her blood sugars because she cannot afford the testing strips, but when she does her blood sugar is generally >250 mg/dL. Her weight has increased eight pounds in the last 12 months. Today, her primary concern is ongoing headaches.

For decades, the adverse effects of food insecurity on the physical, emotional, cognitive, and intellectual development of children has been appreciated. Many of these effects have been attributed to dietary micronutrient deficiencies. For example, food insecure mothers are more likely to be deficient in iron and folate, which is linked to adverse fetal outcomes at birth and throughout the lifespan. Children living in food insecure households are more likely to develop iron deficiency, which impacts cognition, attention, and behavior even after treatment.¹⁶ Only more recently has the health impact of food insecurity for adults been recognized.

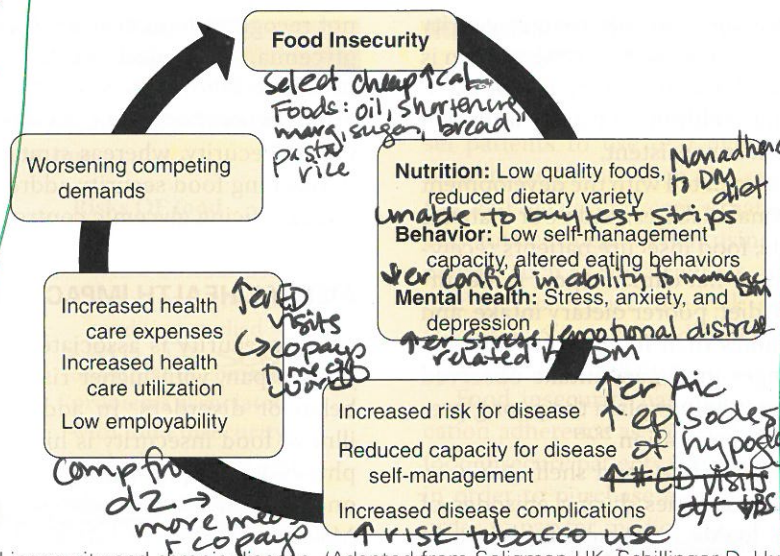
Three pathways likely drive the relationship between food insecurity and acute and chronic illness in children and adults: nutritional, behavioral, and mental health (Figure 26-2). Once a food insecure child or adult becomes chronically ill, competing demands place further stresses on food budgets creating a cycle of worsening food insecurity and chronic illness.

Food insecurity is thus a concern for medical providers not only because it predisposes people to acute and chronic illness, but also because acute and chronic illness predisposes households to food insecurity. It is in the context of diet-sensitive chronic diseases, such as obesity, diabetes, hypertension, and congestive heart failure, that food insecurity presents the greatest challenges. Coping strategies that allow people to avoid the physical sensation of hunger may be adaptive in the short term, but when maintained over years or decades they predispose adults with diet-sensitive chronic disease to poor disease control and ultimately increased risk of complications. These complications result in additional health-care expenditures and low employability, which further strain food budgets.

Protective Factors

- Fed nutrition prog's (e.g. SNAP)
- Financial skills (e.g. budgeting)
- Knowledge of comm resources
- cooking skills
- Policies that ↓ spending on non-food items (e.g. Affordable housing, Medicaid expansion, living wage, etc)

A vicious cycle...



RF's For Food Insec.

1. Kids @ home
2. ↓ income
3. racial/ethnic minority status
4. Single parent household
5. Mental illness (direct)
6. tobacco use (anyone in home)
7. Chronic illness (DM, HTN, HLD)
8. Political unrest or natural disasters

Figure 26-2. Cycle of food insecurity and chronic disease. (Adapted from Seligman HK, Schillinger D. Hunger and socioeconomic disparities in chronic disease. *N Engl J Med* 2010;363:6-9; and Weiser SD et al. Conceptual framework for understanding the bidirectional links between food insecurity and HIV/AIDS. *Am J Clin Nutr* 2011;94:1729S-1739S.)

These coping strategies also explain why food insecurity is associated with both under- and over-nutrition.

NUTRITIONAL IMPACT OF FOOD INSECURITY

Dietary intake among people living in food insecure households is poorer than dietary intake among individuals in food secure households.¹⁷ The diets of food insecure adults tend to be lower in vegetables, fruit, dairy, and some micronutrients than the diets of food secure adults, while the diets of food insecure children are lower in fruit than the diets of food secure children. The relatively better diets of food insecure children compared to food insecure adults may reflect the capacity of adults in the household (particularly mothers) to buffer the impact of food insecurity on children in the household by more heavily altering their own dietary intake.¹⁸ Much qualitative data document the sacrifices household adults make to ensure children have access to sufficient calories of the highest possible quality. However, even in households where the children are presumably shielded, children still seem to suffer adverse health consequences, potentially mediated by the high levels of stress, which accompany household food insecurity.

The average American household in the lowest income quintile already expends more than a third of their annual income on food.¹⁸ A diet recommended by the US Department of Agriculture (including five servings of fruits and vegetables daily) would require the average low-income family to spend 43–70% of their entire food budget on fruits and vegetables, leaving little left over for protein, dairy, and grains.¹⁹ Calorie for calorie, the cheapest foods in the United States include oil, shortening, margarine, sugar,

bread, pasta, and rice.²⁰ Moreover, in the last three decades, the prices of fruits and vegetables have become more expensive compared to other foods.²¹ Substituting healthy foods with saturated fats and sugar significantly reduces food costs.²² If one's goal is to maximize caloric intake for the cheapest amount of money in anticipation of future food shortage, adhering to a healthful diet may be a luxury.

Although it is possible to eat healthy and nutritious foods on a very low budget, medical providers must recognize other barriers to healthy dietary intake in this population. Barriers perceived as additional “costs” to healthy dietary intake include the availability of equipment for food storage and preparation (i.e., it is challenging to prepare raw foods if the utilities have not been paid, or a family is living in a car or a homeless shelter), time to travel to stores which stock a variety of healthy foods that are of acceptable quality, and time to prepare nutritious foods (e.g., raw fruits and vegetables). Although the average US household spends 4.4 hours weekly on food production, eating on a Thrifty Food Plan budget requires an average of 13.1 hours weekly; that means to eat a healthy, very low cost diet requires more than one additional hour per day of food preparation (US Department of Agriculture defines a nutritious diet at four different price points. The Thrifty Food Plan is the lowest cost of these plans, followed by the Low-Cost, Moderate-Cost, and Liberal Food Plans).^{1,23} Institutions that provide free or reduced cost food as part of the hunger safety net are subject to these same pressures, forcing food pantries, soup kitchens, and school-based meal programs to reduce the quality of the meals they provide as well. Therefore, relying on the hunger safety net does not consistently alleviate the poor nutritional intake associated with food insecurity.

print out?

Erratic dietary changes associated with food insecurity are one likely reason that food insecurity among women is associated with obesity. Food insecurity may also be associated with obesity among children and men, although this evidence has been far less consistent.

Food insecurity is also associated with the development of type 2 diabetes, gestational diabetes, and poor diabetes outcomes.²⁴⁻²⁷ For example, food insecure patients receiving care for diabetes in safety-net clinics report more difficulty following a diabetic diet, poorer dietary intake, and higher hemoglobin A_{1c} values than food secure patients in the same clinics. Changes in dietary intake observed among patients with diabetes help explain the poor glycemic control observed in this population.^{28,29}

Highly processed foods are cheap and shelf-stable, so they are often relied on for calories during episodes of food scarcity. In addition, highly processed foods generally contain high levels of sodium in order to boost flavor, improve the appearance of key ingredients (such as vegetables in soup), and preserve freshness. High sodium intake during episodes of food scarcity may impact management of hypertension and congestive heart failure.

BEHAVIORAL IMPACT OF FOOD INSECURITY

Much of the behavioral impact of food insecurity (low self-management capacity, altered eating behaviors) is driven by its cyclic and episodic nature, as described earlier. Episodes of food scarcity are sometimes, but not always, predictable. For example, an unexpected cold snap will drive down food expenditures in low-income, but not higher-income, households as food budgets are diverted to home fuel costs.³⁰ The pent-up demand for food when money becomes available is evident, for example, by increases in grocery store purchases at the beginning of the month.

Women who restrict their dietary intake when food is less available and then “make up for it” when food becomes available—the so-called feast or famine phenomenon—are at high risk for obesity. In turn, maternal obesity is a risk factor for childhood obesity. Adolescents living in food insecure households are more likely to exhibit similar “feast or famine” eating behaviors, such as binge eating.³¹ Other behaviors common in food insecure households include food hoarding and a reluctance to try new foods, which, if not consumed, drain the family food budget.

In the context of diabetes, such fluctuations in the availability of food are even more challenging to manage. Although on average food insecure patients with diabetes have higher hemoglobin A_{1c} values, they also report more episodes of severe hypoglycemia and more emergency department visits for hypoglycemia.³² In fact, in California, inpatient admissions for hypoglycemia increase by 27% in the last week of the month (when food budgets are most likely to be exhausted) compared to the first week of the month, but only in low-income zip codes.⁴ If providers do

not recognize food insecurity as the etiology of the hypoglycemia, the typical clinical response is to reduce oral hypoglycemia medication or insulin. Such management exacerbates the poor glycemic control associated with food insecurity, whereas strategies that support patients in reaching food security address the hypoglycemia without sacrificing glycemic control.

MENTAL HEALTH IMPACT OF FOOD INSECURITY

Food insecurity is associated with mental health across the lifespan, with higher risk of depression, anxiety, and behavior disorders. In addition to diagnosable mental illness, food insecurity is highly stressful. Food is a basic physiologic requirement; if unavailable, it will dominate one's cognition and behavior (a concept articulated in Maslow's Hierarchy of Needs³³), reducing bandwidth available for other important tasks such as parenting children, maintaining employment, registering or re-registering for benefits, and managing chronic illness.

For people with diet-sensitive chronic disease, food insecurity adds an additional layer of stress to diabetes self-management. Overall, food insecure adults with diabetes report lower confidence in their ability to manage their diabetes and greater emotional distress related to their diabetes.

Ms. Walker discloses that she frequently is skipping meals to save money but takes her medications most days of the week. Although she is enrolled in Medicaid, she is not enrolled in a nutritional assistance program. She is motivated to quit smoking.

STRATEGIES FOR ADDRESSING FOOD INSECURITY IN THE CLINICAL SETTING

Providers should routinely screen selected populations for food insecurity, including patients with obesity, diabetes, weight loss, vague abdominal complaints (especially children), and mental illness (Box 26-2). In addition, providers should screen patients in safety-net settings and households with children (see “Core Competency”). Some patients feel stigmatized by their inability to support the food needs of themselves or their family; providers must therefore pay particular attention to addressing food insecurity nonjudgmentally. Providers may need to use many approaches to address food insecurity in the clinical setting.

REFERRALS

Emphasize that adequate access to nutritious food is critical for maintaining health. Many adults are reluctant to access the hunger safety net, but reframing the issue as a

Box 26-2. Common Pitfalls

Health-care providers do not regularly incorporate food insecurity into patient care

Risk factors FOR food insecurity

- Low income
- Minority status
- Single-parent household
- Children in the household
- Chronically ill household members
- Smoking
- Substance use
- Political unrest/natural disasters

Protective factors

- Cooking skills
- Financial management skills
- Access/knowledge of resources
- Living in areas with a stronger hunger safety net

Risks OF food insecurity

- Worse outcomes in almost every medical condition studied
- **WHY TO SCREEN: Short list of common problems associated with food insecurity:**
 - Obesity
 - Diabetic complications of poor glycemic control AND hypoglycemia
 - Development of gestational diabetes
 - Nutritional deficiencies leading to low birth weight; intellectual and emotional difficulties in children
 - Anemia
 - Stress
 - Poor medication adherence

health priority may encourage people to take advantage of existing resources. Consider whether your patient might be eligible for SNAP, WIC, or home-delivered meals. Congregate meal sites for seniors are sometimes available. Encourage use of food pantries when budgets are tight.

COUNSELING

Food insecure households face many challenges in making dietary substitutions. Providers who do not recognize the profound barriers patients face to medication and dietary adherence may inadvertently cause and/or exacerbate this low confidence and distress by repeatedly revisiting, emphasizing, and insisting on behavior changes that seem impossible to attain.

Provider counseling that includes only budget-neutral strategies for behavioral change may partially alleviate this distress (see Chapter 12). For example, emphasizing portion control rather than dietary substitutions may be a more effective strategy for initially engaging food insecure patients in self-management. For Ms. Walker, reducing her portion size of rice from one cup to half cup is more achievable than increasing her vegetable intake. Once a patient is engaged in the process of behavior change, then dietary substitutions can be addressed.

MEDICATION MANAGEMENT

Medication management is most important for food insecure patients with diabetes. To avoid hypoglycemia, counsel patients to use oral hypoglycemic and insulin only with meals (rather than at a certain time of day) in order to avoid the hypoglycemia that accompanies an unexpectedly missed meal. When using oral hypoglycemic medications such as sulfonylureas, use those with the shortest half-life to reduce the risk of hypoglycemia. Patients should also reduce medication doses on days when food access is unpredictable.³⁶

Food insecurity has important implications for medication adherence as well. Because of competing demands, food insecure patients may put off taking their medications in order to purchase food or may put off buying food in order to pay for medicines. Among food insecure patients with diabetes, limited ability to afford testing strips may also contribute to the increased risk of hypoglycemia.

Review out-of-pocket health-care expenditures with food insecure patients and assist patients to minimize them. Patient assistance programs may be one avenue to explore for patients facing difficulty affording medicines or supplies.

SMOKING AND SUBSTANCE ABUSE

Because nicotine acts as an appetite suppressant, food insecure patients may have a particularly difficult time with smoking cessation (see Chapter 40). Smoking cessation in this population is important, however, not only to mitigate the adverse health effects associated with smoking but also because it relieves food budgets (for the smoker and the rest of the household), which in turn may allow for more healthy food purchases.

Use of alcohol and other illicit substances similarly drains food budgets (see Chapter 39). Therefore, smoking cessation and substance abuse treatment are important components to addressing food insecurity.

POLICY AND ADVOCACY

Physicians can be strong voices for policies that support food security in their local communities (see Chapter 8). Suggestions for local advocacy efforts to enhance food security include improving school meals; access to SNAP, WIC, and other nutritional benefits programs; supporting the hunger safety net; and supporting policies that benefit low-wage earners. Schools provide an excellent opportunity to reach children and adolescents with nutrient-dense foods and to model healthy eating practices. Policies that improve the nutrient content of school meals, encourage more low-income children to participate in school meals, and maintain school meal access through vacation periods can have a substantial impact on relieving food budgets at home.

Although many states have enrolled most people eligible for SNAP, WIC, and other nutrition benefits programs, some states have very low participation rates. For example, California, Colorado, Hawaii, Kansas, New Jersey, Nevada, Texas, and Wyoming each have very low rates of SNAP participation. Physicians can advocate for reaching those who are left out. These families often have language barriers, mistrust of the government, or some household members being undocumented.

The United States has a system of food banks, food pantries, soup kitchens, and community dining programs that are essential sources of food support for food insecure families. Inadequately funded programs must rely on cheap, nutrient-poor foods. Advocating for adequate funding can improve the availability of healthy foods available in the hunger safety net. Finally, supporting policies for low-wage earners such as increasing the minimum wage, housing assistance, and enhancing other areas of the safety net will increase well-being overall for poor families, not the least by increasing the budget for food.

CONCLUSION

Food insecurity is highly prevalent in the United States and has important implications for both the development and management of disease. Addressing food insecurity in the clinical setting may improve chronic disease self-management and reduce stress. Enrollment in federal nutrition programs may be the single most effective strategy for reducing food insecurity among patients. These programs are targeted at low-income households, with specific programs targeting vulnerable populations such as children, seniors, and pregnant or postpartum women. The three largest federal food and nutrition assistance programs are the SNAP, the WIC, and the National School Lunch Program (NSLP).¹⁰ However, policy-level solutions are required for more broadly addressing food insecurity.

KEY CONCEPTS

- Food insecurity is a medical issue.
- Food insecurity can cause illness and make illness more challenging to manage.
- The food insecure patient with diabetes faces the most acute challenges and risks.
- Providers should tailor medication regimens and dietary counseling for all food insecure patients, particularly in the context of diabetes.
- Enrollment in federal nutrition programs may be the single most effective strategy for reducing food insecurity among patients.
- Policy solutions for addressing food insecurity are necessary for more broad scale reductions in food insecurity rates.

CORE COMPETENCY

Addressing Food Insecurity in the Clinical Setting

Screen for food insecurity:

- Screen for food insecurity, particularly in the following clinical scenarios—obesity, diabetes, hypertension, congestive heart failure, weight loss, vague abdominal complaints (particularly among children), and mental illness. All patients in safety-net settings and all households with children should be screened.

Screening suggestions

- I'm going to tell you two statements that people have made about their food situation. Please tell me whether the statement was often true, sometimes true, or never true for (you/your household) in the last 12 months—that is, since last (name of current month).
 - The first statement is "(I/We) worried whether (my/our) food would run out before (I/we) got money to buy more." Was that often true, sometimes true, or never true for (you/your household) in the last 12 months?
 - The second statement is "The food that (I/we) bought just didn't last, and (I/we) didn't have money to get more." Was that often, sometimes, or never true for (you/your household) in the last 12 months?
- An "often" or "sometimes true" response to either question has a 97% sensitivity and 83% specificity for food insecurity in households with children.^{34,35}

Tailor dietary counseling:

- Emphasize portion control over dietary substitutions.
- Where dietary substitutions are necessary, make cost-neutral recommendations.
- Discuss cost-effective strategies for affording healthy foods: enrolling in federal nutrition programs to supplement food budgets, buying fresh fruits and vegetables in season or frozen, and shopping at farmers markets.

Research hunger safety-net options in your community:

- What percentage of food provided by the local food bank is healthy food?
- Does your community have access to community dining programs for seniors?
- Home-delivered meals for the elderly or homebound?
- How do you enroll in SNAP, WIC, or the NSLP in your community?

Appropriately manage oral hypoglycemic medications and insulin for food insecure patients with diabetes:

- If you must use oral diabetes medicines, which can predispose to hypoglycemia, limit risk by prescribing medications with a short half-life.
- Counsel patients to reduce or eliminate diabetes medications when access to food is unreliable. Although many patients understand the concept of reducing medications for a "sick day," many food insecure patients are not aware that this same principle applies for days when food access is reduced.
- For medications that can predispose to hypoglycemia, label prescription bottles to be taken with meals, rather

than at a time of day, **in order to emphasize the importance of having access to food**, for example, “glipizide 10 mg with breakfast and dinner” rather than “glipizide 10 mg twice daily.”

Screen for use of tobacco or illicit substances:

- These behaviors reduce food budgets dramatically (see Chapters 39 and 40). Initiate appropriate counseling, treatment, and referrals. Remember that the appetite suppressant effects of some of these substances, particularly tobacco, complicate cessation attempts.

Assess for other indicators of malnutrition:

- Among the elderly, it is important to assess indicators that include **chewing or swallowing difficulties; loss of appetite; alcohol use; eating alone; and physical challenges in shopping, cooking, or feeding oneself**. Some validated screeners are available (see Chapter 23).
- **Review out-of-cost expenditures for health care**. Try to minimize out-of-pocket health-care expenditures by, for example, adhering to medication formularies, providing 3-month supplies of medication when copayments are unavoidable, and combining medical visits where allowable to reduce copayment burdens.
- Refer the patient to a **social worker** and benefits counselor to address whether he or she is receiving all allowable nutrition services and benefits.
- Refer to a **nutritionist** for additional assistance with dietary counseling.
- **Acknowledge and address competing priorities** that might affect self-management capacity.
- **Advocate for systems changes** that can help reduce burden of food insecurity (see Chapter 8).

DISCUSSION QUESTIONS

1. Discuss the difference between food insecurity and hunger. Can you explain how food insecure persons may adapt their behaviors to avoid hunger?
2. Imagine you work in a clinic that takes care of vulnerable populations. How might you incorporate screening questions for food insecurity into your clinic workflow? Are there particular groups of patients you would focus on? If so, who? What recommendations you would make to a patient who is food insecure?
3. Describe how food insecurity can lead to a downward spiral of overall health.

RESOURCES

Feeding America: www.feedingamerica.org.

United States Department of Agriculture, Economic Research Service: <http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us>.

Food and Agriculture Organization of the United Nations: www.fao.org.

Food Research and Action Center: Frac.org.

Children's Health Watch: www.childrenshealthwatch.org.

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