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FOOD STAMPS AND OBESITY

What We Know and What It Means

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Critics of the Food Stamp Program point to higher rates of obesity among some low-income populations and question whether the program might have been too successful in boosting food consumption. They assert that giving assistance in the form of benefits

redeemable for food, instead of cash, has led participants to spend more on food and eat more than they would have otherwise. Others wonder if the monthly issuance of food stamp benefits is linked to boom-and-bust cycles of consumption that could lead to weight gain over the long term.

A recent ERS report explores whether there is any evidence of a causal link between food stamp participation and obesity. ERS reviewed and synthesized the growing and sometimes conflicting research on the issue. Researchers placed greater weight on studies that used statistical methods to control for the fact that people choose to participate in the program and those who

- Food Stamp Program participation does not increase the likelihood of being overweight or obese for men or children.
- Women are the only group for which multiple studies show a potential link between food stamp participation and body weight.
- Devising policy changes for household members who may be at risk of gaining weight, without harming those who are not but still need food assistance, is a difficult challenge.

do not increase either Body Mass Index (BMI—a measure of weight adjusted for height) or the likelihood of being obese. A review of the research indicates that food stamp benefits do not increase the likelihood of being overweight or obese for men or children. For nonelderly adult women, who account for 28 percent of all food stamp participants, multiple studies show a potential link between food stamp receipt and an increase in obesity and BMI, although this effect appears to be small—about 3 pounds for a woman 5'4" to 5'6" tall. Some studies found that long-term participation in the program appears to heighten the impact on obesity.

participate are likely to be different from those who do not in ways that researchers cannot always observe. These differences could be related to body weight.

The weight of evidence from these studies indicates that for most program participants, food stamp benefits



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It is not clear why participation in the Food Stamp Program may increase the probability of obesity for women but not for men or children. Research about the causes underlying these results is not conclusive. Differences in energy requirements, activity levels, and eating patterns could be possible explanations. Because the Food Stamp Program is administered as a household-level program, devising program changes that are appropriately targeted to household members who may be at risk of gaining weight, without harming those who are not and need the nutritional assistance, is a challenge. Policy changes that help program participants improve their overall diets or help them “smooth” their food consumption over periods of high and low income may be more effective. For example, issuing food stamp benefits on a biweekly, or even weekly basis, may help food stamp participants obtain and consume food on a more even basis.

Too Much Money for Food or Too Infrequently Issued?

The Food Stamp Program is an entitlement program available to all U.S. households that meet the eligibility requirements pertaining to income, assets, work, and immigration status. Program benefits can be used to purchase almost any food sold by participating food retailers, except for food prepared in the store, hot foods, and alcohol and tobacco. The average monthly benefit level in 2007 was \$96 per person and \$215 per household, which translates roughly to \$3.20 per person per day or \$7.16 per household per day to spend on food. Most program participants spend some of their own money on food in addition to their monthly food stamp allotment.

There are two leading explanations for how food stamp benefits could contribute to weight gain that may lead to obesity. The first argues that restricting



Jack Hollingsworth, Brand X Pictures

Food stamps may allow participants to increase their purchases of fruit and vegetables.

food stamp benefits to food purchases results in participants spending more money on food and, thus, consuming more food than they otherwise would if they did not participate in the program. Although food stamp benefits may have the intended effect of reducing undernourishment or underweight for at least some participants, this explanation implies that the benefits may also be pushing a portion of participants into overweight or obesity. If true, then one solution is to deliver food stamp benefits as cash. Cash benefits have been found to induce smaller increases in food spending than benefits that can be spent only on food.

But even if receiving food stamp benefits leads participants to spend more on food, it does not mean that the additional spending results in overconsumption and obesity. It is possible that food stamp benefits allow people to choose a different bundle of foods than they otherwise would. For example, participants may shift spending toward relatively more expensive foods that were previously out

of reach (e.g., fresh meats versus canned beans or fresh fruit and vegetables instead of canned items). Or, since food stamps can be redeemed for food only in grocery stores, participation in the program may shift a household's food spending toward foods prepared and consumed at home, as opposed to food away from home. In either case, an increase in food expenditures would not necessarily lead to overconsumption of calories or a poorer diet.

The food stamp cycle explanation argues that the practice of distributing food stamps only once a month results in alternate periods of under- and overconsumption, a pattern dubbed the “food stamp cycle,” which may result in weight gain. Households consume food every day but purchase food less regularly—every few days for some households, every few weeks for others. It is possible that food stamp participants run out of food (and benefits with which to purchase more food) near the end of the month. As food becomes scarce and food intake is

restricted, a person may lose weight. Then, when food is abundant, the individual may overeat. This distorted pattern of consumption with its periods of binge eating gradually can lead to increased weight.

Teasing Out Cause and Effect

Two conditions can be associated with each other, without one being the cause and the other the effect. Food stamp benefits may be associated with increases in body weight but may not *cause* greater body weight if something else is to blame. Determining cause and effect is difficult because no experiments have been conducted comparing the body weights of participants randomly assigned to receive program benefits with those of others assigned to a comparison program (or lack of a program). Researchers must instead rely on nonexperimental methods that try to determine what would have happened if no one received food stamp benefits or if an alternative program to food stamps was implemented.

Comparing body weights of food stamp participants with those of eligible nonparticipants is an obvious starting point, but this approach may be problematic. Food Stamp Program participants may have different characteristics than those who are eligible for the program but choose not to participate. Very poor individuals, for example, may be more likely to participate than individuals who are less poor but still eligible. A household with a strong preference for food relative to other necessities may be more likely to apply for food stamps than an otherwise similar household. This strong preference for food may also lead to weight gain that would have occurred whether or not the household participated in the program.

While most studies try to control for as many differences between participants and nonparticipants as possible, it is likely that important differences are not observed. If these differences are related

to body weight, then the estimated effects of food stamp participation could be biased. This bias is called selection bias because individuals self-select into the Food Stamp Program. Researchers note that poverty is associated with higher risk of obesity in some population subgroups (for example, White women), but lower risk in others (among Black and Hispanic men), suggesting that selection bias can be positive or negative in the case of food stamp participation and obesity. Accounting properly for selection bias can reveal a higher or lower risk of obesity than estimates that do not account for such bias.

ERS researchers reviewed over a dozen studies of the relationship between food stamp participation and BMI and the likelihood of obesity. Several of the earlier studies used cross-sectional data (observations of many individuals for a single point in time) and controlled for observed factors that might be related to body weight, such as age, race, sex, and education. While these studies are useful for understanding broad trends and highlighting

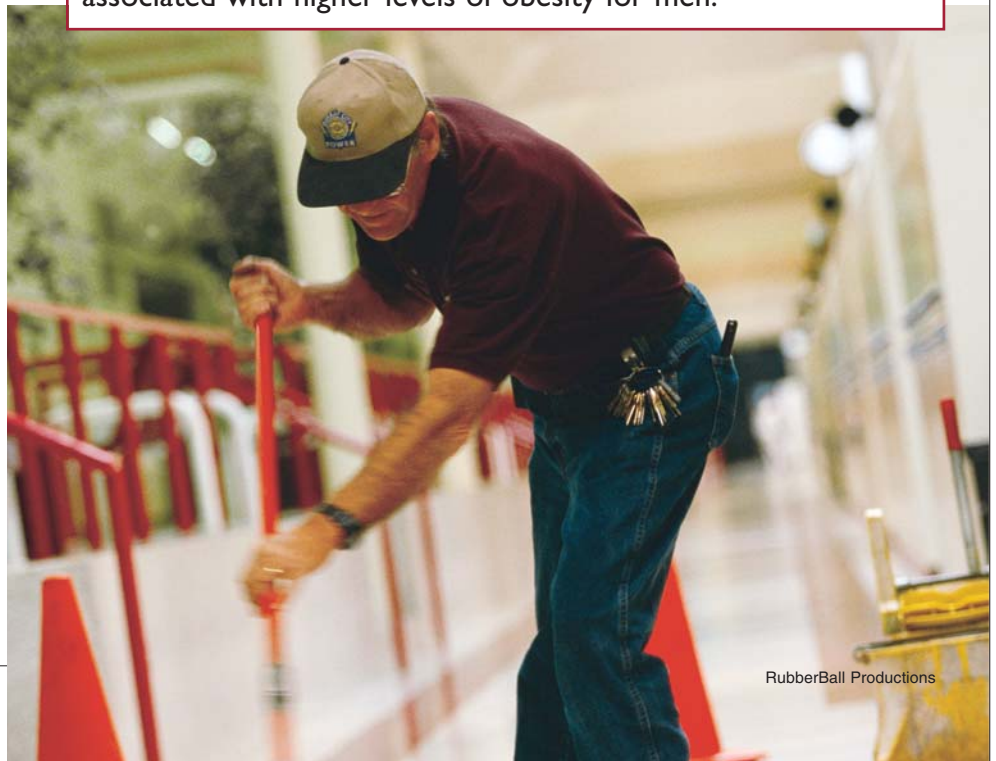
possible relationships for further exploration, they do not account for potential selection bias and only observe individuals at a point in time, so they are of limited use in drawing causal conclusions.

The ERS review focused primarily on studies that attempt to control for selection bias (often using longitudinal data with multiple observations on the same individuals) and which are better able to tease out cause and effect between food stamp participation and weight. One can never be sure that these methods are truly picking up cause and effect, but the methods used in these studies help researchers get closer to that goal.

Diverse Effects Reflect Diverse Participants

The Food Stamp Program serves a diverse population. In 2006, children accounted for almost half of all participants. Working-age women made up 28 percent of the caseloads, working-age men 13 percent, and the elderly age 60 and older 8 percent. Most of the food stamps issued go to households containing a

Reviewed evidence suggests that food stamp participation is not associated with higher levels of obesity for men.



child, elderly adult, or nonelderly disabled person (89 percent of all benefits). Many of the households receiving food stamps are single-adult households with children (34 percent). The ERS review of the effects of food stamp participation on body weight for this diverse group of participants found that food stamp participation has a small effect on obesity for adult women, but not for men or school-age children. Only a few studies have looked at children younger than 5 and the elderly, and they did not control for selection bias, so these subgroups are not discussed here.

Results for children ages 5-12 vary across sexes and differ in the direction of the relationship between food stamp participation and body weight. For young boys, studies found either no relationship between food stamp participation and BMI, or that food stamp participation is linked to a lower probability of being overweight (BMI-for-age greater than or equal to the 95th percentile).

For young girls, some studies found no association between food stamp participation and BMI. One study found that additional years of food stamp participa-

tion were associated with greater probability of being overweight. Another found a negative relationship between food stamp participation and being at-risk of overweight (BMI-for-age greater than or equal to the 85th percentile). These two studies used different methodologies, which could account for the disparate results.

For adolescent children (ages 12-18), food stamp participation does not seem to be related to BMI or the probability of being overweight. None of the reviewed studies found a link between program participation and body weight for teenage boys or girls.

Only one reviewed study found a significant link between food stamp participation and BMI, overweight, or obesity status for men ages 19-59. That study found that food stamp participation by men was positively related to BMI but not to overweight or obesity. Previous studies comparing average BMI for men across food stamp participation and income levels found that for some racial and ethnic groups, food stamp participants had lower BMI than income-eligible nonparticipants

and higher income men. In view of that, it is possible that either the positive effect of food stamps on BMI was not large enough to shift more men into the overweight (BMI greater than 25) and obese (BMI greater than 30) categories, or the shift in BMI was an improvement among underweight men.

Adult (ages 19-59) women are the only food stamp participants for which multiple studies show a link between food stamp participation and overweight. Not all studies showed that participation affects body weight. However, results from studies that used different techniques to control for selection bias indicate that food stamp participation may increase the probability that a woman is obese. The estimated 2- to 5-percentage-point change in the probability of being obese translates into a 5- to 21-percent increase in obesity rates. Other results show that food stamp participation is associated with an estimated 0.5-point increase in BMI for women, or about 3 pounds for a woman between 5'4" and 5'6" tall.

Over Longer Participation, Effects May Accumulate

The reviewed studies showed a stronger connection between long-term food stamp participation on body weight than short- or medium-term participation. Two studies found that women who received food stamp benefits for longer periods of time (one study defined "long term" as at least 2 consecutive years, the other as up to 5 consecutive years) increased the probability of being obese by 4.5 to 10 percentage points, which translates into a 20- to 50-percent increase in obesity rates.

Evidence is mixed with respect to long-term food stamp participation and men's weight. One study found no relationship between long-term participation (up to 5 consecutive years) on BMI or the



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Almost half of all food stamp participants are children.

probability of obesity for men. A second study found that participation for at least 2 consecutive years increased BMI and the probability of obesity for men, but shorter and repeated participation did not have these effects.

Most food stamp participants receive benefits for less than a year—the median length of food stamp participation is 6 to 8 months. Some participants, however, cycle on and off food stamps and others participate for longer periods. It is possible that small but positive effects of current food stamp participation on BMI may accumulate over longer, or shorter but repeated, periods and result in substantial total effects on BMI over time. Or, if the causal mechanisms underlying weight gain for women are related to periods of boom and bust surrounding the monthly issuance of food stamp benefits, then prolonged food stamp use could result in long-term weight gain. Further research may be able to tell a clearer story.

Implications for the Type and Timing of Benefits

One hypothesis of how food stamp participation causes weight gain is that benefit amounts are too high, causing participants to spend more money on food and, thus, consume more food than they otherwise would. One of the reviewed studies showed that the effect of food stamp participation on obesity is larger for single women than for women residing in households with more than one adult. Other research found that food stamps have little impact on the amount of money single women spend on food (i.e., the benefit amount is at least as big as what they otherwise would have spent on food). In that case, "cashing out" food stamp benefits to reduce overconsumption may not have the intended effect on body weight. The group whose weight is most affected by food stamp participation



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would not change their food spending if the benefits were shifted to cash.

Some studies measured participation as a dichotomous yes-or-no condition, while others looked at the amount of benefits the household received. Studies that used the amount of benefits to measure participation found a less consistent relationship between food stamp benefit levels and obesity as those that used the dichotomous measure. So, while some studies suggest a relationship between food stamp participation and obesity among women in particular, the research does not clearly indicate that higher benefit levels are associated with greater BMI and obesity, or that lower benefits would lead to lower BMI.

None of the studies reviewed explicitly tested whether boom-and-bust food consumption patterns associated with the benefit payment cycle contribute to obesity. If further studies find a causal link between the timing of benefits and disrupted patterns of consumption, possible policy solutions could include either increasing the frequency of benefit payments (biweekly or weekly) or raising the benefit amount, which could, paradoxi-

cally, help reduce obesity by reducing hungry days at the end of the benefit cycle.

The stronger relationship between food stamp participation and body weight found for women but not for men, the mixed relationships found for young boys and young girls, and the lack of any relationships found for adolescents make it difficult to come up with appropriate changes to the program to address obesity. Most food stamp benefits go to households that contain a child, elderly adult, or nonelderly disabled adult. Devising program changes that are appropriately targeted to household members who may be at risk of gaining weight, without harming those who are not, will be difficult. Nutrition education efforts and other programs that help improve the overall diets of all household members may be more effective. \mathbb{W}

This article is drawn from . . .

Food Stamps and Obesity: What Do We Know? by Michele Ver Ploeg and Katherine Ralston, EIB-34, USDA, Economic Research Service, March 2008, available at: www.ers.usda.gov/publications/eib34/

You may also be interested in . . .

"Food Stamps and Obesity: Ironic Twist or Complex Puzzle?" by Michele Ver Ploeg, Lisa Mancino, and Biing-Hwan Lin, in *Amber Waves*, Vol. 4, No. 1, USDA, Economic Research Service, February 2006, available at: www.ers.usda.gov/amberwaves/february06/features/feature4.htm

The ERS Briefing Room on the Food Stamp Program, www.ers.usda.gov/briefing/foodstamps/

The ERS Briefing Room on Diet and Health, www.ers.usda.gov/briefing/dietandhealth/