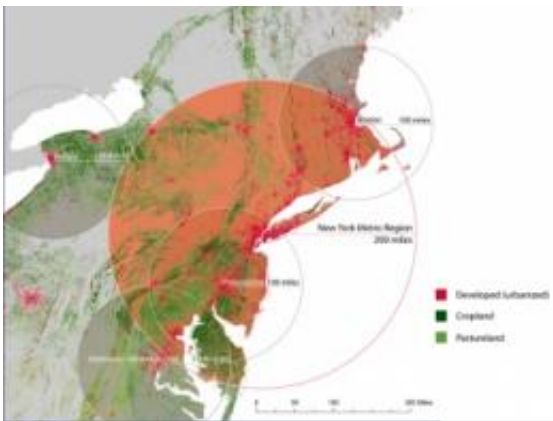


Good food nation: Researchers think America's obesity epidemic can be reversed via 'foodsheds'

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A map of northeastern cities depicts their proposed “foodsheds,” the areas that naturally supply metropolitan areas with their food. Image: Urban Design Lab at the Earth Institute, Columbia University

(PhysOrg.com) -- In the last three decades, childhood obesity in the United States has become a massive public-health problem. According to the Centers for Disease Control, between 1980 and 2006 the percentage of obese teenagers in the United States grew from 5 to 18, while the percentage of pre-teens suffering from obesity increased from 7 to 17. Such children often become overweight adults, leaving themselves especially susceptible to heart illness, Type 2 diabetes, strokes, and some forms of cancer.

These weight problems do not simply stem from a lack of willpower, according to Dr. Tenley Albright, director of MIT's Collaborative Initiatives program, which uses systems analysis to study broad social issues. Albright is a Harvard-educated surgeon who, two years ago, helped organize an interdisciplinary group of about 10 researchers, from MIT and Columbia University, specifically to analyze the causes of child [obesity](#). Aided by a grant from the United Health Foundation, the team scoured medical and economic data, and consulted with medical researchers, economists and policy-makers, before releasing an initial October 2008 report.

The group's conclusion: Obesity is widespread due to our national-scale system of food production and distribution, which surrounds children — especially lower-income children — with high-calorie products. “The problem lies not just in a child, but the whole environment around a child,” says Albright. “To end obesity, we need to produce healthier, more accessible, more affordable food.” As Albright notes, 90 percent of American food is processed — according to the United States Department of Agriculture — meaning it has been mixed with ingredients, often acting as preservatives, that can make food fattening.

Now, in another report finished this October after meetings with food-industry leaders, the MIT and Columbia researchers propose a solution: America should increase its regional food consumption. Each metropolitan area, the researchers say, should obtain most of its nutrition from its own “foodshed,” a term akin to “watershed” meaning the area that naturally supplies its kitchens. Moreover, in a novel suggestion, the MIT and Columbia team says these local efforts should form a larger “Integrated Regional Foodshed” system, intended to lower the price and caloric content of food by lowering distances food must travel, from the farm to the dinner table.

Welcome to the food terminal

Only 1 to 2 percent of all food consumed in the United States today is locally produced. But the MIT and Columbia team, which includes urban planners and architects, believes widespread adoption of some modest projects could change that, by increasing regional food production and distribution.

To help production, the group advocates widespread adoption of small-scale innovations such as “lawn to farm” conversions in urban and suburban areas, and the “10 x 10 project,” an effort to develop vegetable plots in schools and community centers. Lawns require more equipment, labor and fuel than industrial farming nationwide, yet produce no goods. But many vegetables, including lettuce, cucumbers and peppers, can be grown efficiently in small plots. “A lot of those projects could be started immediately,” says Michael Conard, assistant director of Columbia’s Urban Design Lab, who notes that during World War Two, small “victory gardens” produced more than 40 percent of America’s fruits and vegetables.

To better distribute local food, some cities, including Oakland, Calif., Philadelphia, and Newark, N.J., give grants and tax credits to help small markets sell fresh produce. But the architects and designers in the MIT/Columbia group suggest entrepreneurs or government should invest in a new concept: “food terminals,” retail developments combining grocery stores with greenhouses, farmers’ markets, restaurants, and even education centers as magnets for city residents who otherwise lack access to fresh produce.

“These would be multi-faceted places where people could buy food, learn about it, and get health information,” says Kenneth Kaplan, an architect and associate director of MIT’s Collaborative Initiatives project. “This is an urban planning challenge because the large supermarkets tend to sit out on the periphery of cities. In the areas where there is a deficit in healthy food, the infrastructure is simply not there.”

Retailing could also occur through low-cost “mobile food markets”: buses retrofitted to sell produce.

Since not all regions grow the same produce, the researchers allow that many goods would still be shipped across regions. “We’re not saying people in New England shouldn’t eat pineapple,” says Eleanor Carlough, program director of the Collaborative Initiatives. “But the apples grown in New England should stay there, if possible.”

The proposal has received some favorable reactions so far. In an op-ed in The New York Times in September, food writer Michael Pollan hailed the MIT/Columbia project, and suggested the foodshed concept “could be the key to improving the American diet.”

Saving on health care

Building regional foodsheds, however, will be a long-term process. The crux of the problem is how to make food both cheap and healthy. As multiple economic studies show, the price of healthy food has risen more quickly than the price of unhealthy food in recent decades. And as a 2004 study from the American Journal of Clinical Nutrition found, \$1 could buy 1,200 calories of potato chips and 875 calories of soda, but only 250 calories of vegetables and 170 calories of fresh fruit.

“Business certainly isn’t altruistic by nature, and you’re not going to create a change unless you can show how people can make money,” Carlough acknowledges.

Moreover, lifestyle changes have altered the way Americans eat. The USDA estimates that a family of four, with two kids between 6 and 11 years old, can maintain a healthy diet for roughly \$700 to \$1,050 per month, or \$23 to \$35 per day. That is based on market-bought food prepared at home, however. As the USDA also notes, money spent on

food away from home increased about 17-fold in the [United States](#) from 1960 to 2005; among other things, people are consuming more high-fat “convenience” foods, as the MIT and Columbia researchers call them, which are more widely available in all kinds of stores than ever before.

However, the researchers claim, an increasingly regional system of making and selling healthy foods will lower the cost of those goods, by reducing things like transportation costs. A University of Iowa study shows that fruits and vegetables grown locally travel an average of 56 miles from farm to table, as opposed to an average of 1,494 miles for produce grown in other regions. In a new phase of their work, the researchers aim to examine these economic factors more closely.

Moreover, the researchers assert, society as a whole pays for our national-scale food economy in ways that go beyond the price of food. Another Iowa study suggests that food production incurs additional costs of \$6 billion to \$16 billion when factors such as energy use and health care are included.

As Albright sees it, the effort to produce healthier foods “fits right in with the health-care reform effort right now because chronic diseases are so costly for the nation.” America currently spends \$14 billion annually treating childhood obesity, and \$147 billion treating all forms of obesity. Pollan, for his part, contends in the same Times piece that expanding health-care coverage would lead insurers to realize they “have a powerful interest in reducing rates of obesity and chronic diseases linked to weight.”

The MIT researchers recognize it will take a long-term effort to change the way America eats. For now, they say, it is important to show that alternatives exist. “People haven’t focused on our food system yet because it’s big, it’s political, and it’s complex,” says Carlough. “But it is a critical issue that needs to be addressed.”

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