MIT Collaborative Initiatives and the Urban Design Lab at the Earth Institute, Columbia University Announce Completion of a Three-Year Look at Nation's Obesity Crisis

National Food System Infrastructure Identified as a Primary Culprit

NEW YORK – A three-year investigation recently completed by MIT Collaborative Initiatives (MIT-CI) and the Urban Design Lab at the Earth Institute, Columbia University (UDL) used a design- and systems-based approach to detect drivers of and potential solutions for the current crises in obesity and diet-related disease faced by the United States. Findings point to key factors in the food system that impact all populations.

There is a correlation across the nation between areas with limited access to healthy food and areas of obesity and chronic disease prevalence in both rural and urban populations. Specifically, data examined from New York City and Chicago showed that neighborhoods with limited access to healthy food options (defined for this project as fresh fruits and vegetables and minimally processed foods) saw significantly higher obesity rates than areas just a few miles away that enjoy greater access to healthy food products. Additionally, the rural counties where the bulk of our agricultural commodities are produced are, paradoxically, often areas with limited access to healthy foods, and see similar obesity rates.

MIT-CI was founded on the belief that design as a discipline is well-suited to addressing complex societal problems. The UDL has an established record of design research into complex systems. A design-based analysis requires knowledge of the relationships between various parts of a system; an understanding of the long-range effect of changing any one part of that system; and awareness that approaching any single part of a comprehensive system independently will have limited effect. In this study, researchers have attempted to consider factors that contribute to obesity, their interrelation, and their effect on one another.

The research team studied the latest data on a broad range of topics related to obesity and researched and visited current intervention programs nationwide. The team considered the interrelation of broad social issues, including market trends, lifestyle changes in recent decades, policy impacts, socioeconomic factors, and the built environment as well as current literature on pharmacological, hormonal and epigenetic factors contributing to obesity.

MIT-CI and UDL’s design-based look at the obesity crisis identified the current structure of the national food system as a primary culprit. The way food is produced, processed, and distributed directly impacts the incidence of obesity and chronic disease. The current food system was developed with an emphasis on quantity over quality, actively promoting a reduction in crop variety. The unintended outcome of these policies was a rise in low-cost processed foods, which tend to cost much less per calorie than healthy foods. Low cost and long shelf life make highly processed foods particularly attractive to families with limited food budgets.

Solutions to this problem will involve changes to food production techniques, the development of a region-based processing and distribution infrastructure, and new models for healthy food retail. A restructuring of the food supply infrastructure from its current processing and transport emphasis—in which food is often transported vast distances for processing, and then redelivered back to where it started—to a more regional approach is critical in order to improve food delivery efficiency. Improved
efficiency is the first step toward improved affordability, which the study indicates will lead to better access, and eventually, better long-term health.

MIT-CI and UDL concluded that the development of a strong integrated regional food system based on access, affordability, quality, and health is a critical step needed to support community interventions across the country and enable long-term change.

According to Professor Michael Conard of the Urban Design Lab, “Most global food crises have been infrastructural, involving breakdowns in regional distribution systems. Bigger systems are clearly no longer the better systems for the long term. Strengthening our regional systems can be a key contributor to many of our most challenging environmental and health problems.”

Dr. Tenley Albright, Director and Cofounder of the MIT Collaborative Initiatives, says, “Our goal is to refocus the food system to be a positive driver for health. Our methods are design-based, synthesizing multiple objectives into a collective approach. Having identified a clear target our next step is to use these same methods to unify stakeholder objectives and define a realistic roadmap for change.”

For more information, please contact Rachel Finan at 202.339.9598 or Rachel@prcollaborative.com.

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