

Faculty of Design

2020

## Obesity in Western Pennsylvania

Hu, Alison, Tang, Gary, Xi, Sarah and Wu, Emily

---

### Suggested citation:

Hu, Alison, Tang, Gary, Xi, Sarah and Wu, Emily (2020) Obesity in Western Pennsylvania. In: Proceedings of Relating Systems Thinking and Design (RSD9) 2020 Symposium., 9-17 Oct 2020, Ahmedabad, India. Available at <https://openresearch.ocadu.ca/id/eprint/3742/>

*Open Research is a publicly accessible, curated repository for the preservation and dissemination of scholarly and creative output of the OCAD University community. Material in Open Research is open access and made available via the consent of the author and/or rights holder on a non-exclusive basis.*

*The OCAD University Library is committed to accessibility as outlined in the [Ontario Human Rights Code](#) and the [Accessibility for Ontarians with Disabilities Act \(AODA\)](#) and is working to improve accessibility of the Open Research Repository collection. If you require an accessible version of a repository item contact us at [repository@ocadu.ca](mailto:repository@ocadu.ca).*

# OBESITY

## in Western PA

Alison Hu Emily Wu Gary Tang Sarah Xi

### INTRODUCTION:

Nearly 40% of adult Americans are diagnosed with obesity, a preventable disease with links to heart disease, the leading cause of death in the United States. Globally and nationally, one in five children and adolescents are overweight. Those who are obese are at much higher risk for premature death. Obesity does not discriminate—it is experienced by those who are at both ends of the socioeconomic tier. Needless to say, the high prevalence of obesity is a red flag, indicating a call for help.

Obesity comes as a result of consuming more calories than expended. Since obesity is preventable, then it would seem natural to simply cut back on the calorie intake and perhaps hop on an elliptical. However, without realizing the effects of the environmental, political, technological, and economic realm, is to not see the issue at all.

To understand the depth and complexity of this issue, our team created the following map to draw out causes and implications of the multi-faceted problem. This map uses categorical labels to develop a rich holistic picture of the problem, as defined by man made boundaries. By understanding obesity as a problem of many roots and within multiple hierarchies, our group created this visual guide that tells the story of obesity as we know it.

### INTERVENTION: Mandated Public Policy

#### LEVERAGE POINT 5: RULES OF THE SYSTEM

##### POLICY TODAY

While there are policies in place for health and fitness standards, the lack of cohesive mandated legislation and regulation results the failure to implement change for state and local levels of government. This is a result of the parents' legal authority of children's wellbeing. This authority is the grounds for mandatory policies that only allow the state to intervene in cases of maltreatment instead of prevention-based policies. However, many parents do not have necessary resources or means to adequately support their child, especially for those in the lower class. These are all policies that the state of Pennsylvania does not currently implement.

##### INTERVENTION

By shifting the legal responsibility of children's wellbeing to mandated policies from the government, more preventative measures can be implemented at an earlier stage. If the government takes greater legal authority of wellbeing, then prevention can occur through the mandatory enforcement of pre-existing policies.

REQUIRED RECESS	NUTRITION STANDARDS	PE TIME REQUIREMENT	PHYSICAL ACTIVITY
Recess is required for school systems in states.	States enforce required licensed ECE programs to provide for dietary guidelines.	Elementary, middle, and high schools should require a minimum of education.	Standard definition of physical activity increases fitness requirements.
5 states in the US implement this policy	26 states in the US implement this policy	18 states for elementary 14 states for middle 6 states for high	9 states in the US implement this policy

### macro national



### individual micro

#### LEGEND

→ Neg. Feedback Loop

##### Stakeholders:

- Agricultural Industry
- Fast Food Companies
- Government
- American Youths
- Low Income Population

##### Leverage Points:

- Domestic Agriculture
- Low-Income Access.
- Education
- Intervention

#### ECONOMICS

The easy accessibility of junk food is owed to its widespread distribution and cheap cost. This makes it all the more enticing for low-income consumers, who are more pressed to consider caloric efficiency with a limited budget.

#### POLITICAL

The fast food industry spends millions every year to influence the federal government in various ways to prevent junk food from falling out of favor with the American populace. Misconceptions and lack of nutrition understanding are common among the less educated.

#### SOCIAL

Inadequate support and opportunities afforded for exercise mean a higher rate of obesity, especially among the poor. This includes youth programs, fitness facilities, urban infrastructure, and community safety.

#### TECHNOLOGY

Diseases of affluence abound in the United States partly due to the conveniences and efficiencies of technology. More than ever, Americans are living increasingly sedentary lives.

**LEVERAGE POINT: Domestic Agriculture**  
LEVERAGE POINT 8: NEGATIVE FEEDBACK LOOPS

Overproduction of corn & soy drives down the price of junk food and discourages the cultivation of costlier, riskier fruits and vegetables. Farmers are incentivised to continue overproducing cheap corn, soy, and wheat and are compensated with government subsidies irrespective of crop volume sold.

**LEVERAGE POINT: Low-Income Accessibility**  
LEVERAGE POINT 5: INCENTIVES & CONSTRAINTS WITHIN THE SYSTEM

Among recipients of the food stamp program (SNAP), fresh produce is less often purchased than junk food. Through experimental incentive programs like the one administered by UCSD, fresh produce expenditures are matched dollar for dollar on a store-loyalty basis. This would allow low-income families to afford healthy food despite higher prices.

#### HEALTH EFFECTS:

Obesity contributes to the top three causes of death in America; cancer, cardiac disease, and diabetes. It also may cause depression, cognitive decline, and a myriad of musculoskeletal disorders. Its effects on the American economy range from 21% of all American health expenses to indirect costs to efficiency for businesses everywhere (higher transportation costs, insurance rates, paid leave occurrences). Furthermore, children raised in an environment of obesity are more likely to become obese themselves.

