



# Dietary Lipids: Who's in Control?



Anna-Leila Williams, PhD, MPH  
Frank H. Netter MD School of Medicine at Quinnipiac U.  
Foundations of Medicine I  
Lung, Kidney, Heart Block  
2019

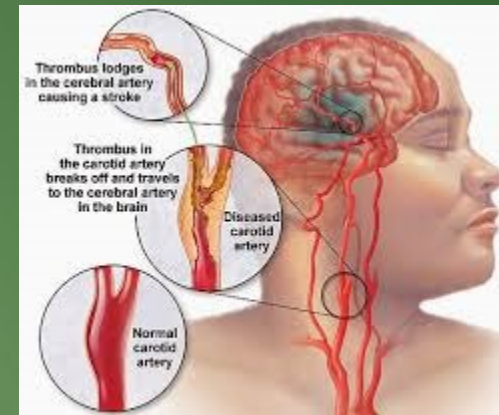
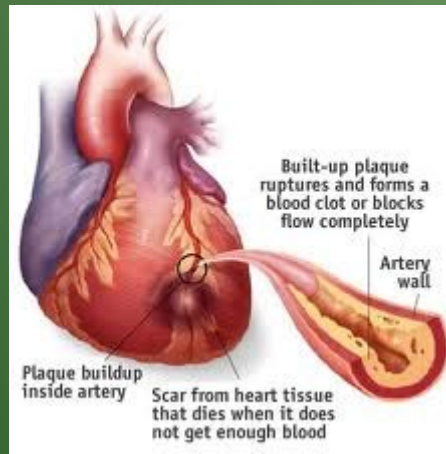
# What We Will Cover

- Dietary lipids in health and illness
- Inter-relationship among basic science, health policy, government regulations, individual behavior, health outcomes, and the physician-patient relationship
- Key recommendations from the National Dietary Guidelines
- Influence of socio-economics and environment on dietary lipid consumption

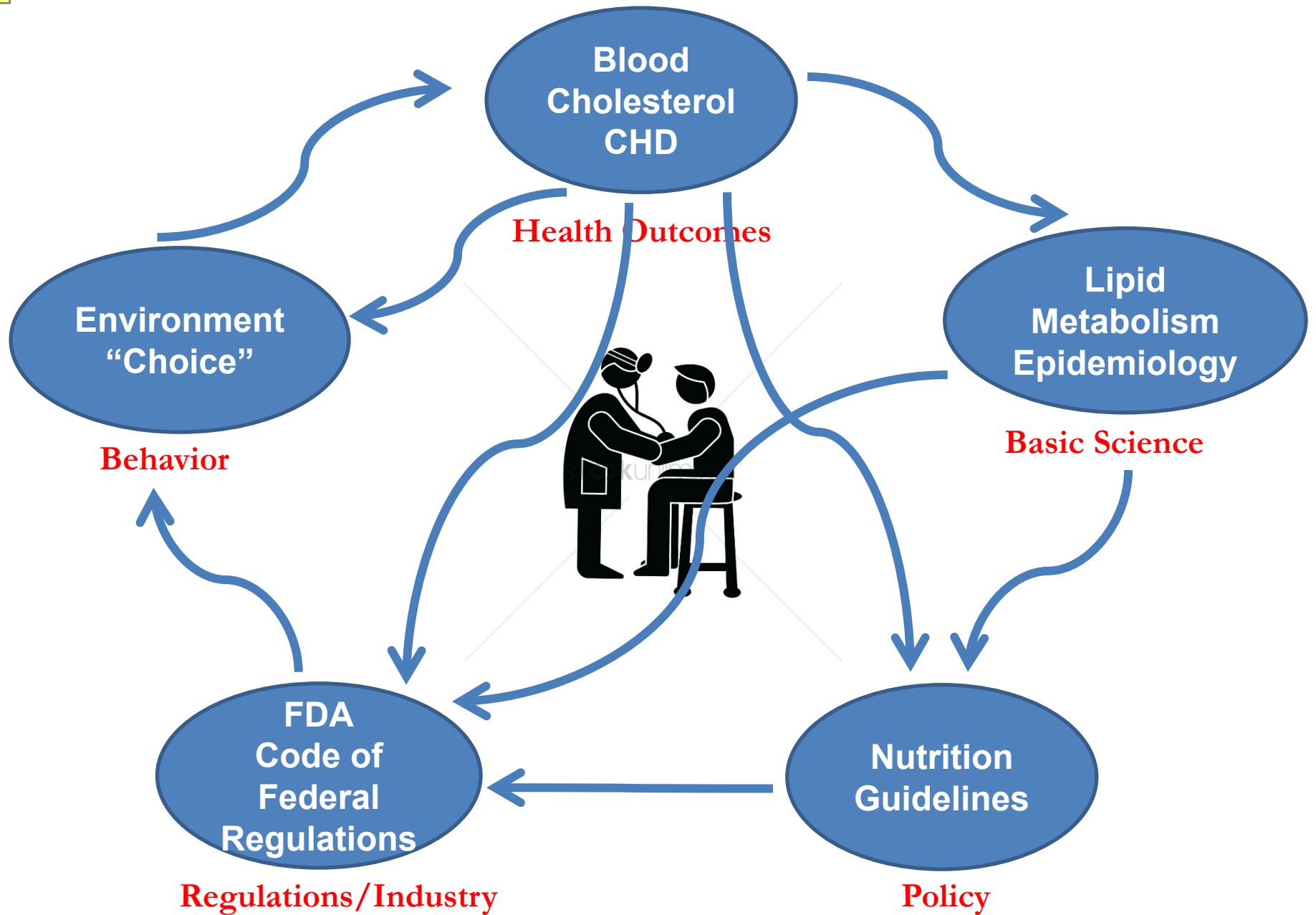


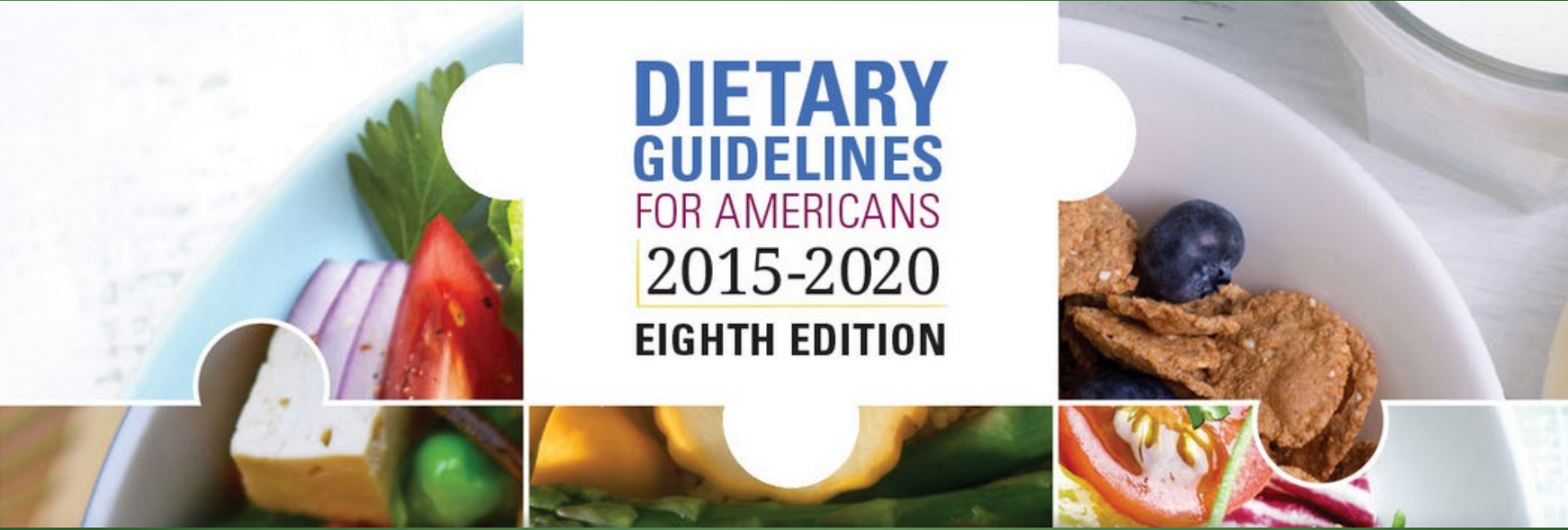
# Dietary Lipids and Health

- Healthy Fats: MUFA and PUFA
- Saturated Fats, *Trans* Fats, and LDL



- 600,000 deaths/year in US
- Leading cause of death
- \$\$\$\$



A collage of four images showing healthy food: a blue plate with tomatoes, onions, and cheese; a bowl of blueberries and cookies; a bowl of green beans and yellow peppers; and a bowl of tomatoes and red onions.

**DIETARY  
GUIDELINES**  
FOR AMERICANS  
**2015-2020**  
EIGHTH EDITION



# Key Recommendations

---



**Consume a healthy eating pattern that accounts for all foods and beverages within an appropriate calorie level.**

**A healthy eating pattern includes:**<sup>[2]</sup>

- A variety of vegetables from all of the subgroups—dark green, red and orange, legumes (beans and peas), starchy, and other
- Fruits, especially whole fruits
- Grains, at least half of which are whole grains
- Fat-free or low-fat dairy, including milk, yogurt, cheese, and/or fortified soy beverages
- A variety of protein foods, including seafood, lean meats and poultry, eggs, legumes (beans and peas), and nuts, seeds, and soy products
- Oils



- Saturated fatty acids < 10% of calories
  - < 5% for people with elevated LDL
  - Lower % reduces risk of CVD
  - Replace with PUFA and MUFA

## **LIMIT SPECIFIC DIETARY COMPONENTS**

- *Trans* fats < 1% of total calories
- Cholesterol — no longer restricted
  - Effect on blood lipids is small
  - Eggs OK





- Criticized by nutrition community
  - vague
  - yielded to food industry pressures
- World Health Organization's classification
  - processed meat - **CARCINOGEN**
    - bacon, sausage, and hot dogs
  - red meat – **PROBABLE CARCINOGEN**
    - beef, pork, and lamb



# Who influences what goes on *your* plate?



In 2014, the top 25 food industry advertisers spent \$14.9 billion advertising\* their products

Source: Ad Age, 200 Leading National Advertisers 2015.  
\*Spending on measured and unmeasured advertising by 25 top food industry advertisers

McDonald's \$1.4 billion  
Pepsico \$1.2 billion  
General Mills \$866 million  
Nestle \$819 million  
Hershey \$745 million  
Kellogg \$666 million  
Coca-Cola \$664 million  
Kraft Heinz \$569 million  
Dr. Pepper \$414 million  
ConAgra \$392 million  
Dunkin Donuts \$382 million  
Wendy's \$347 million



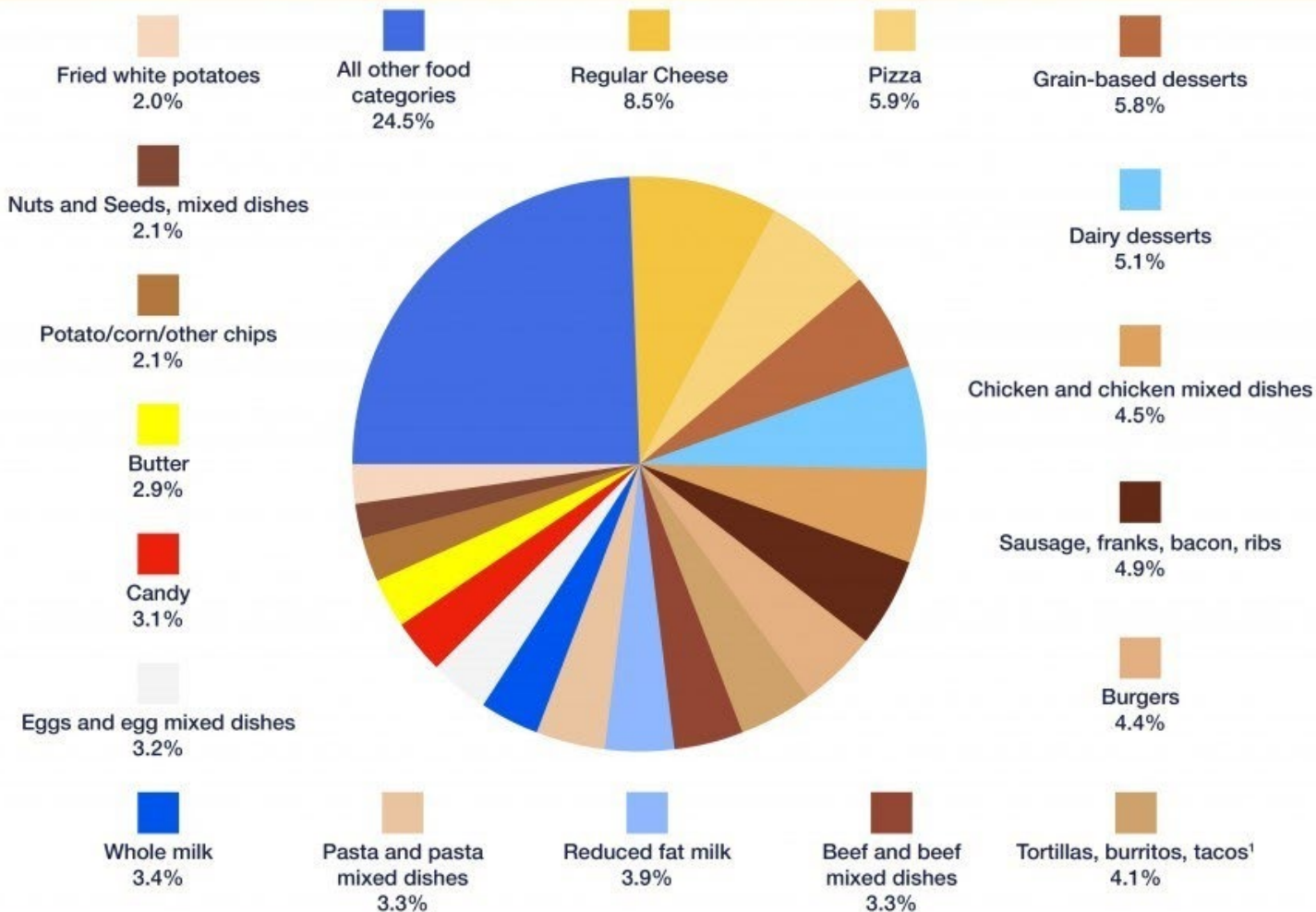
**As a Nation,  
Are We Adhering  
to the Recommendations?**



**Dietary Intake Compared to Recommendations**  
 Health.gov/dietaryguidelines/2015/guidelines/chapter-2 [Figure 2-1]



# Sources of Saturated Fat in the American Diet

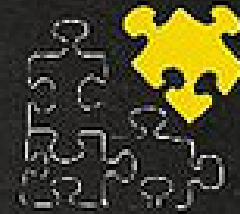


Data are drawn from analysis of usual dietary intake conducted by the National Cancer Institute. Foods and beverages consumed were divided into 97 categories and ranked according to sodium contribution to the diet. "All other food categories" represents food categories that each contributes less than 2% of the total intake of saturated fat from foods. 1. Also includes nachos, quesadillas, and other Mexican mixed dishes.

Source: National Cancer Institute. Sources of saturated fat in the diets of the U.S. population ages 2 years and older, NHANES 2005–2006. Risk Factor Monitoring and Methods. Cancer Control and Population Sciences. [http://riskfactor.gov/diet/foodsources/sat\\_fat/sf.html](http://riskfactor.gov/diet/foodsources/sat_fat/sf.html). Accessed August 11, 2010.

# The Guidelines

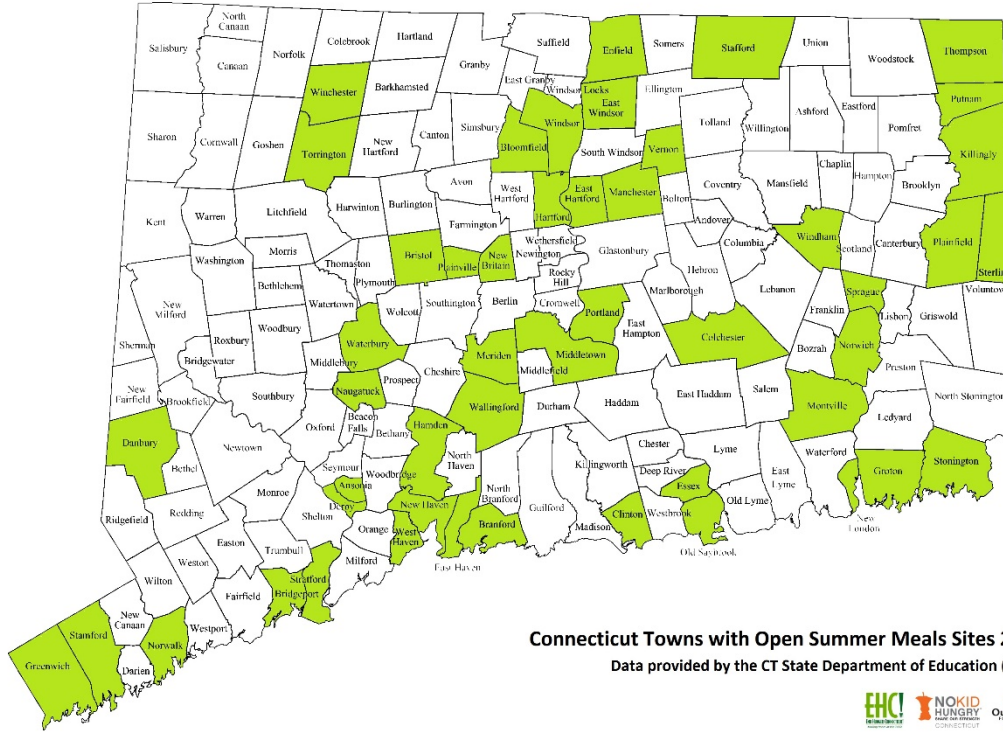
---



- 1. Follow a healthy eating pattern across the lifespan.** All food and beverage choices matter. Choose a healthy eating pattern at an appropriate calorie level to help achieve and maintain a healthy body weight, support nutrient adequacy, and reduce the risk of chronic disease.
- 2. Focus on variety, nutrient density, and amount.** To meet nutrient needs within calorie limits, choose a variety of nutrient-dense foods across and within all food groups in recommended amounts.
- 3. Limit calories from added sugars and saturated fats and reduce sodium intake.** Consume an eating pattern low in added sugars, saturated fats, and sodium. Cut back on foods and beverages higher in these components to amounts that fit within healthy eating patterns.
- 4. Shift to healthier food and beverage choices.** Choose nutrient-dense foods and beverages across and within all food groups in place of less healthy choices. Consider cultural and personal preferences to make these shifts easier to accomplish and maintain.
- 5. Support healthy eating patterns for all.** Everyone has a role in helping to create and support healthy eating patterns in multiple settings nationwide, from home to school to work to communities.



# Food Access



<https://pennur.upenn.edu/publications/feeding-urban-communities-disparities>

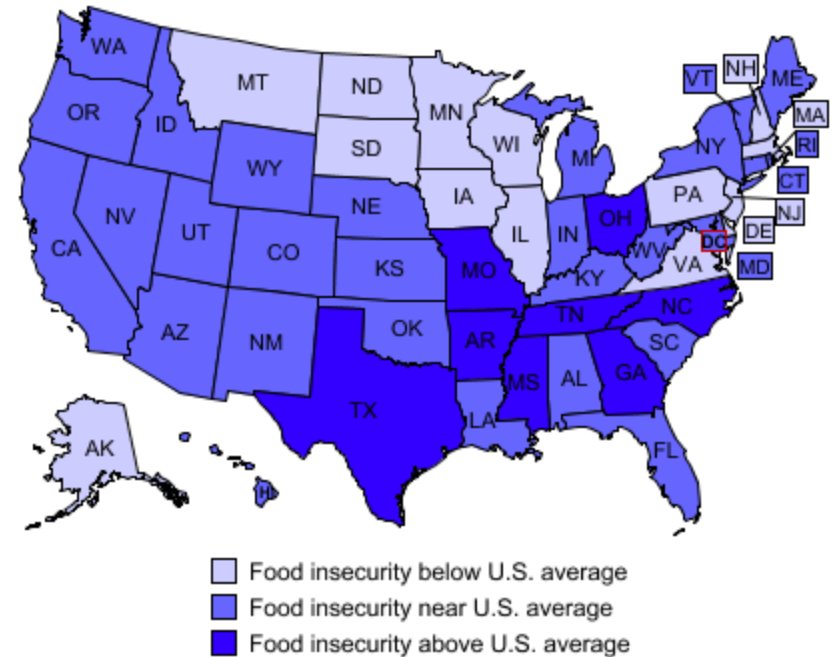
<http://www.freshtruck.org/>



# Food Insecurity



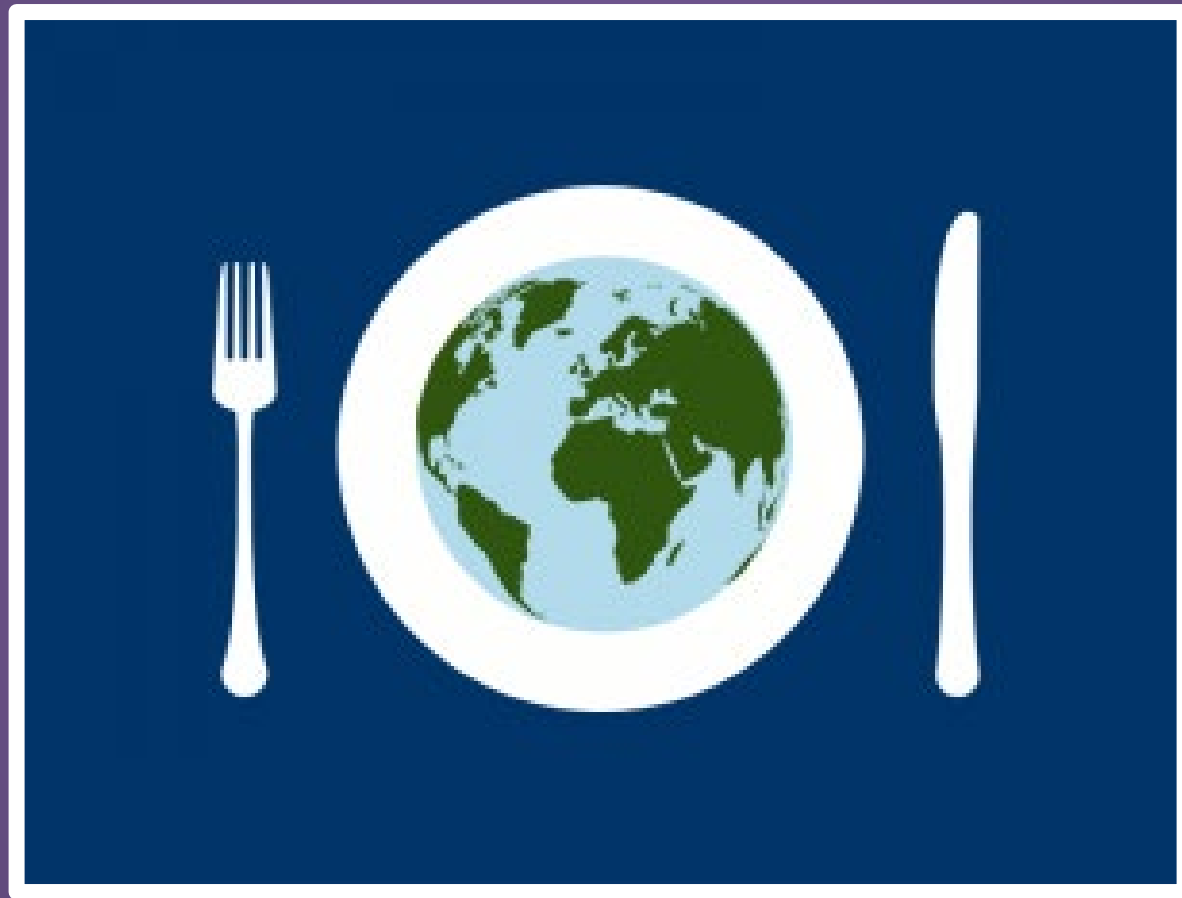
Prevalence of food insecurity, average 2011-13



Source: Calculated by ERS based on Current Population Survey Food Security Supplement data.



# Acculturation



<https://nutrientsforlife.org/for-students/>

belief systems, lifestyles, practices, and traditions

# Summary



- **Dietary Lipids** [health promoting and disease promoting]
  - Recommendations
- **Inter-relationship among science, policy, government regulations, industry, individual behavior, health outcomes**
- **Everyone has a role in creating and supporting healthy eating patterns for all**