The Widespread Impact of Ultra-Processed Foods on Health

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Objective

- Learn how ultra-processed food (UPF) consumption has increased in the U.S. and its impact on diet quality.
- Explore the link to higher UPF intake with poorer lung function, increased risk of PRISm, and low muscle mass.
- Learn how UPFs may cause these health issues, through factors like inflammation and nutrient deficiencies.

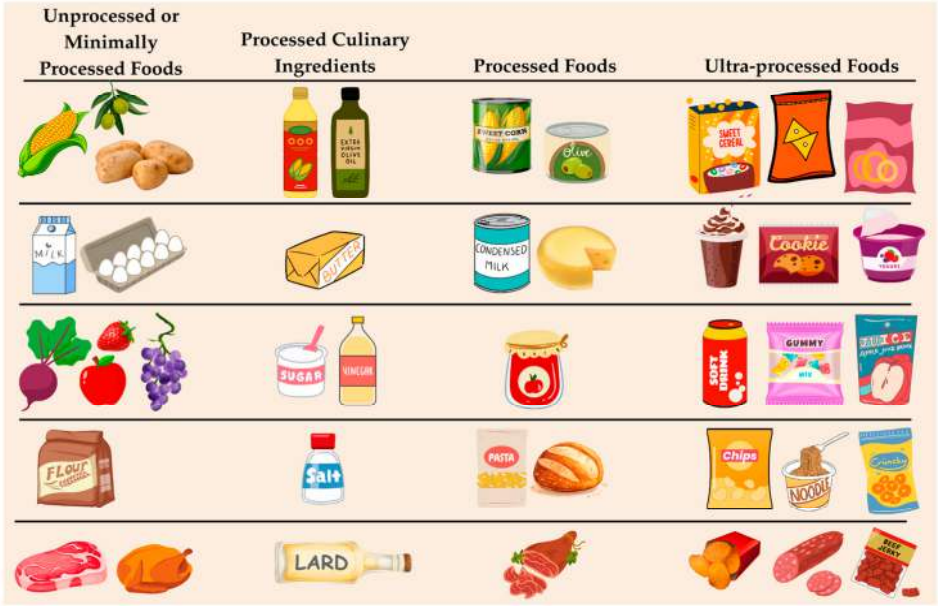
Ultra-Processed Food Epidemic

What are UPFs?

- Commercially manufactured products that are ready to eat or heat.
- Usually contain numerous additives, preservatives, and chemicals.
- Often lack whole, unprocessed foods.

Examples:

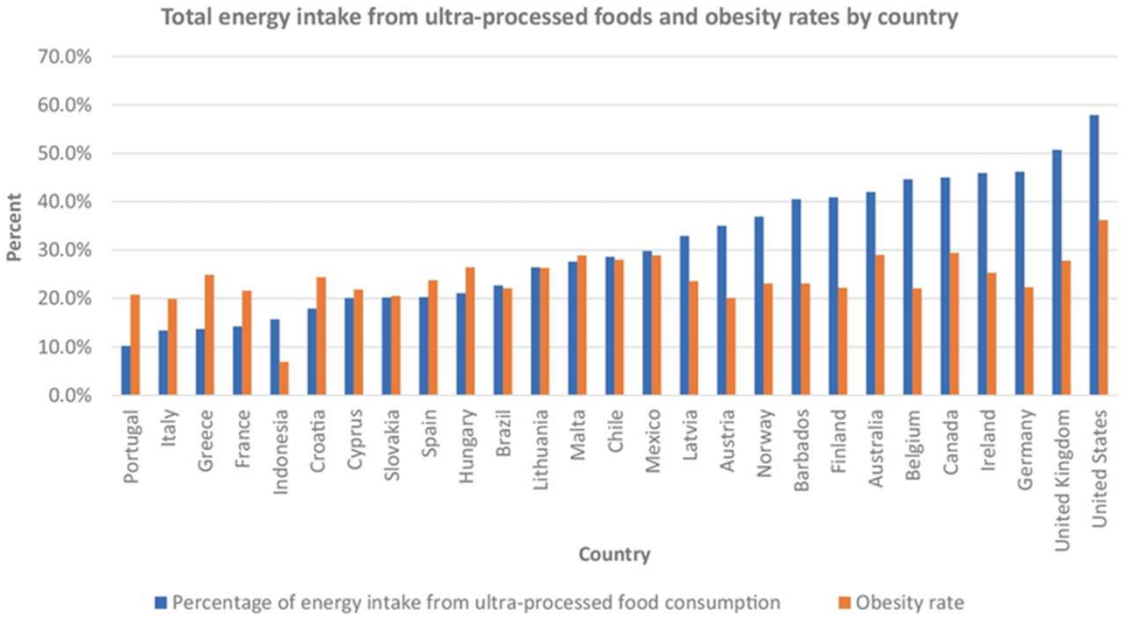
- Frozen pizza
- Ready-to-eat meals
- Instant noodles
- Store-bought breads



Rate of Consumption

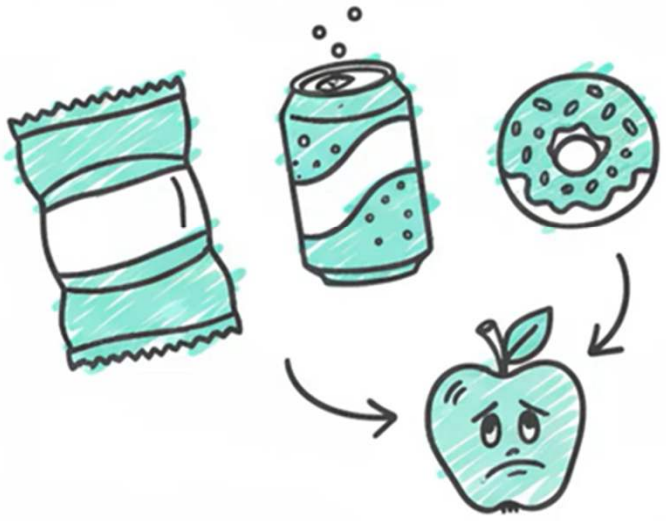
Key Facts:

- UPFs make up approximately 50-57% of the diet for Americans over 50.
- UPFs account for about 61.9% of the diets of children under 18.
- Study revealed older adults age 60+ experienced the sharpest increase in consumption
- Low food security was associated with higher UPF intake



The Ultra-Processed Truth

Poor Nutrition



Muscle Loss Risk

Malnutrition

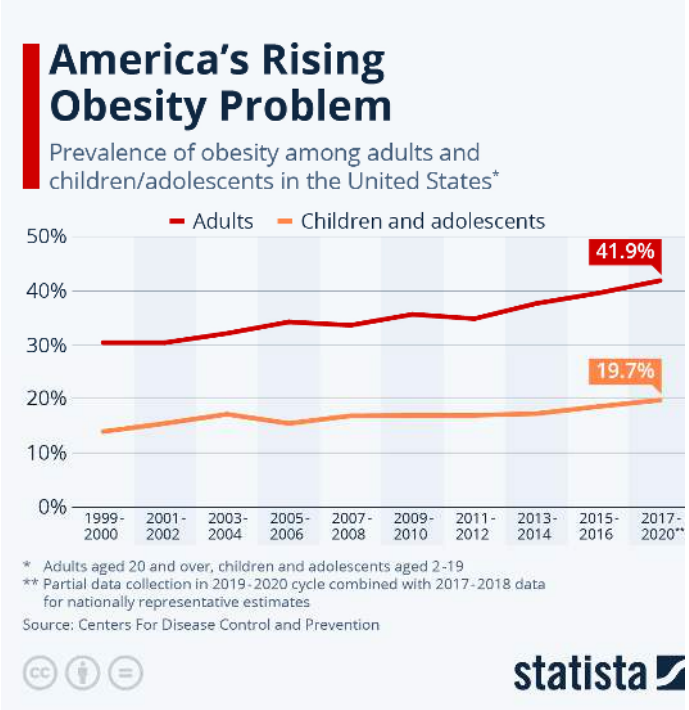
- **Malnutrition:** Describes an imbalance, deficiency, or excess of nutrients that impacts health.
- Can manifest as undernutrition or overnutrition
- Malnutrition impacts healthy lung development from conception through adulthood.

Undernutrition

- Affects over 800 million people worldwide, especially children.
- Causes include lack of food intake, poor diet, or illness.

Overnutrition

- Overeating and obesity



Hidden Hunger

- **Nutrient Loss:**
  - Industrial processing of UPFs often removes vital nutrients, leading to deficiencies that increase with higher UPF consumption.
- **Impact on Health:**
  - Nutrient deficiencies, especially in vitamins, impair immune function.
  - This contributes to increased inflammation and oxidative imbalance, raising the risk of chronic diseases.
- **Decrease in Fiber Intake:**
  - Middle-older adults consuming the most UPFs experienced a **-31% (men)** and **-37% (women)** reduction in fiber intake.

How to Identify Malnutrition and Hidden Hunger

Signes and Symptoms

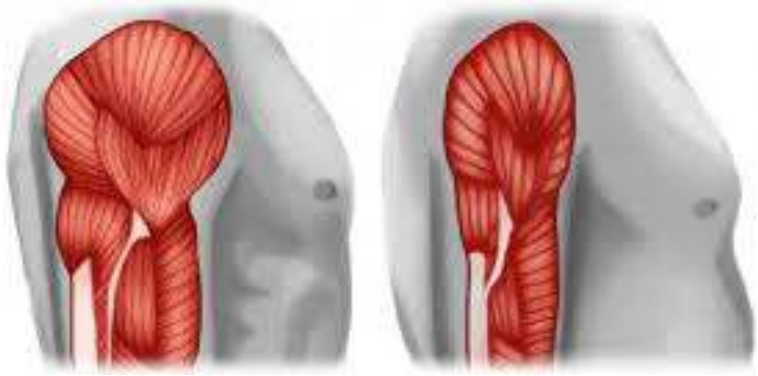
- Fatigue, weakness
- Dry skin, poor wound healing
- BMI les them 18.5
- Anemic
- Electrolyte imbalance
- Deficiencies in vitamin and mineral deficiencies
- Digestive issues
- Difficulty concentrating

Sarcopenia (Muscle Loss)

Causes of muscle loss include:

- Aging
- Disuse
- Hypoxemia (low blood oxygen)
- Malnutrition
- Oxidative stress
- Systemic inflammation

- By age 60, muscle atrophy can reach 20-40%.
- **COPD, bronchiectasis, PNA, heart failure**
  - In approximately 40% of COPD patients, exercise limitation is due to skeletal muscle changes rather than lung issues.
- **Effects of Muscle Loss:**
  - Decreases strength and mobility, impacting daily activities.
- **Impact on Lung Function:**
  - Weakens respiratory muscles (diaphragm and intercostals).
  - Results in reduced lung capacity and increased breathing difficulty.



PRISm

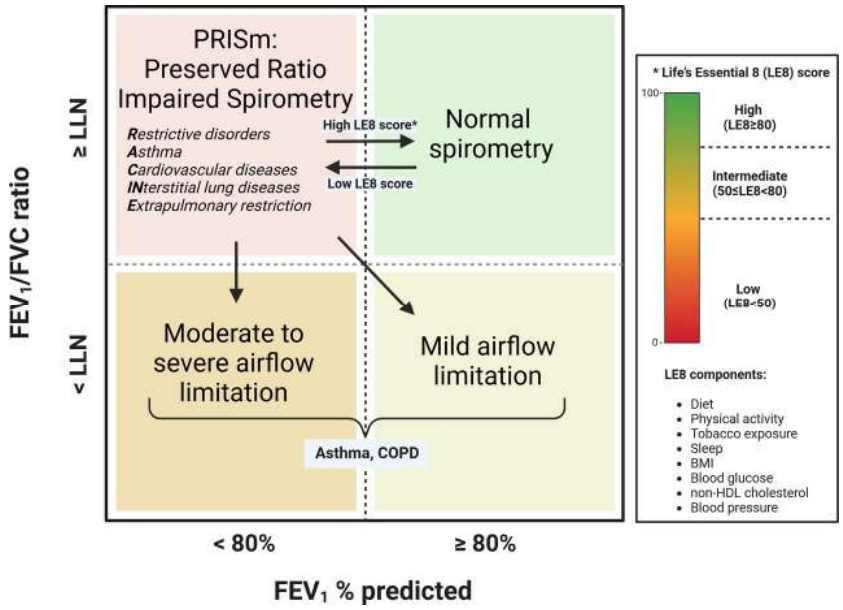
Preserved Ratio Impaired Spirometry

- Characterized by a preserved FEV1/FVC ratio (≥ 0.7) post-bronchodilator but with reduced FEV1 (< 80%)
  - 20-30% may transition to obstructed spirometry over time

- **Why is it important?**
  - Indicator of early lung decline
  - Higher risk of cardiopulmonary disease & hospitalizations
  - Increased risk of developing COPD

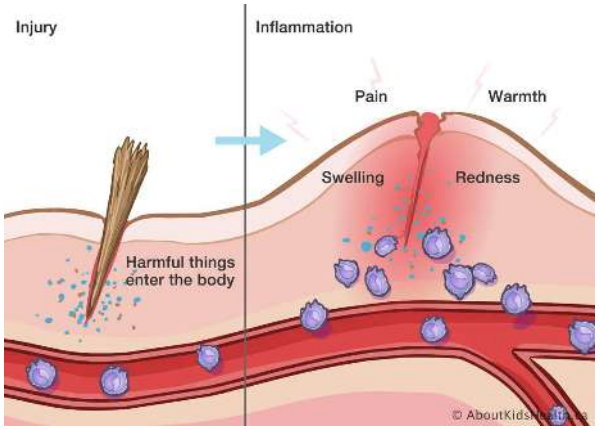
Study Highlights:

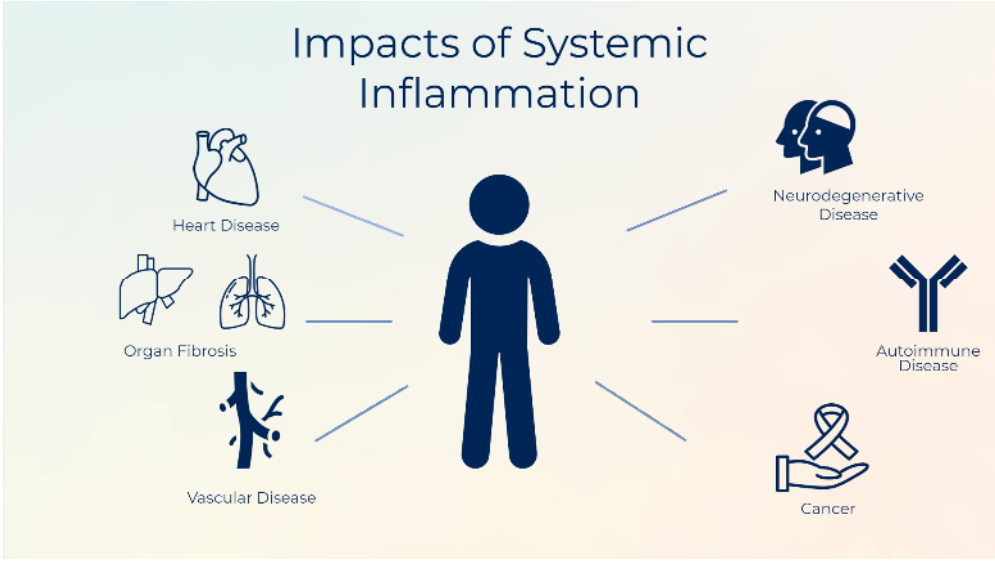
- *8,336 patients, 741 with PRISm*
- Higher UPF intake linked to:
  - ↓ FEV1 (~45.5 mL)
  - ↓ FVC (~139.4 mL)
- Greater UPF intake correlates with worse lung health



Inflammation

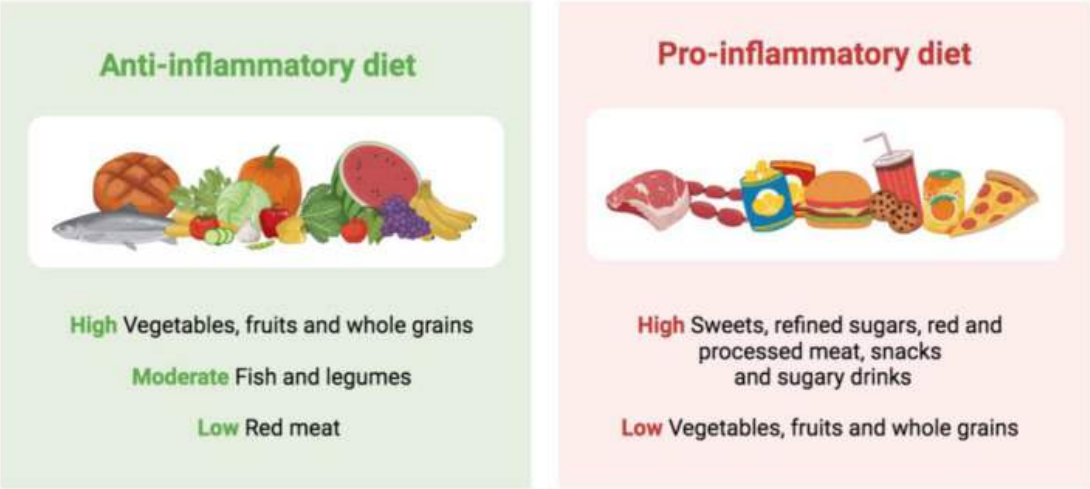
- Inflammation is the body's way to respond to injury, toxins, viruses, and bacteria. It helps repair damage and eliminate harmful agents.
- **Metabolic Syndrome:**
  Chronic inflammation can lead to metabolic syndrome, a group of conditions including:
  - High cholesterol or triglycerides
  - High blood pressure
  - Excess fat around the waist
  - High blood sugar
  - *Note:* Having three or more of these conditions constitutes metabolic syndrome.





Recommended Diet

- Mediterranean diet
- Nordic diet
- A review of 17 clinical trials with 2,300 subjects found that higher adherence to the Mediterranean diet is linked to significantly lower levels of inflammatory biomarkers.



Take Aways

- UPFs are ready-to-eat or heat products with additives, long ingredient lists, and little to no whole foods.
- Malnutrition- can impair lung development in children and worsen lung diseases in adults.
- Hidden hunger- ultra processed diets often strip away essential nutrients, leading to deficiencies despite high caloric intake.
- Maintaining muscle mass is vital for overall health, longevity, and the ability to breathe effectively, especially in COPD and bronchiectasis.
- Chronic inflammation contributes to tissue damage, fibrosis, and lung dysfunction.

Question