



# Nutrition and Immunity

UPMC Health Coach Health Plan Class



UPMC HEALTH PLAN

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# Outline:

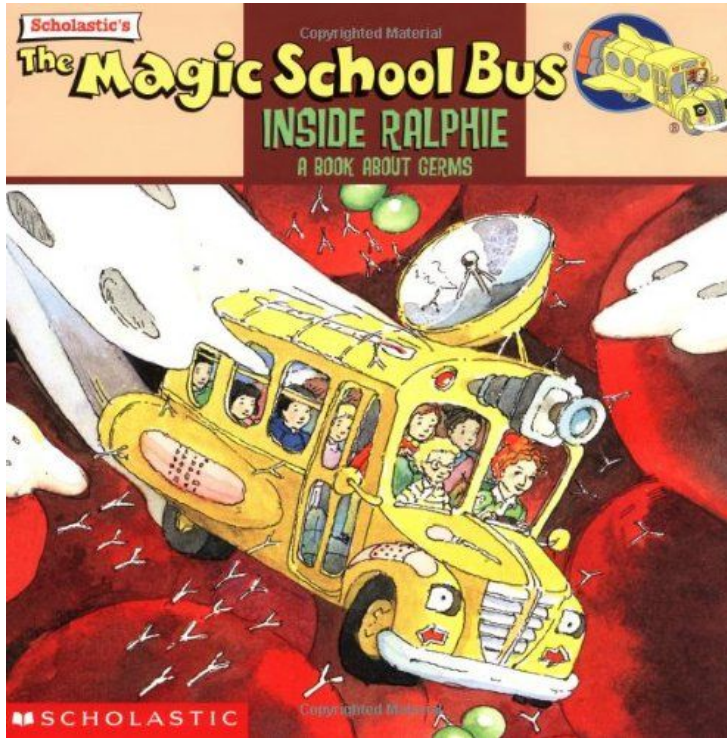
1. What is Our Immune System?
  2. Nutrients and Immunity
  3. The Microbiome
  4. Vitamin C Boosting Orange Julius
- Food Demo



What is your  
go-to sick food?



# What is Our Immune System?



Humans have two types of immune systems:

- **Innate immunity** is a first-line defense from pathogens that try to enter our bodies, achieved through protective barriers.
- **Adaptive or acquired immunity** is a system that learns to recognize a pathogen. It is regulated by cells and organs in our body like the spleen, thymus, bone marrow, and lymph nodes.



# Nutrition and Immunity



- Focus on whole diet, **no singular food offers special protection**
- Essential micronutrients for immune response include but are not limited to:
  - zinc, selenium, iron, copper, folic acid, and vitamins A, B6, C, D, and E
- **Protein** helps build antibodies and immune system cells and plays an important role in healing and recovery



# Micronutrient Highlight: Vitamin C

- helps build healthy skin, which is a barrier to microorganisms, and helps protect cells from damage due to its role as an antioxidant.
- High-heat cooking temperatures or prolonged cook times can break down the vitamin C. This nutrient is water-soluble and can seep into cooking liquid
- **Sources:** Citrus fruits (oranges, grapefruits, tangerines), strawberries, papaya, bell peppers, and Brussels sprouts
- **Megadosing vitamin C:**
  - Studies have shown that absorption of vitamin C decreases to less than 50% when taking amounts greater than 1000 mg



# Micronutrient Highlight: Zinc

- Zinc supports creation of new immune cells, which contributes to the body's ability to heal from wounds.
- Excess zinc can interfere with the absorption of iron and copper
- **Sources:** Lean meats, chicken, turkey, crab, oysters, milk, whole grains, seeds
- **Zinc lozenges:** A Cochrane review of clinical trials found that zinc lozenges did not prevent colds, but if taken within a day of the onset of cold symptoms (sore throat, sniffles), the lozenges could tame its severity

# The Microbiome



- The microbiome is an internal metropolis of trillions of microorganisms or microbes that live in our bodies, mostly in the intestines
- The gut is a major site of immune activity and the production of antimicrobial proteins
- **Probiotic foods:** Kefir, yogurt with live active cultures, fermented vegetables, sauerkraut, tempeh, kombucha tea, kimchi, and miso.
- **Prebiotic foods:** Garlic, onions, bananas, asparagus, whole grains, eggplant, legumes



# Vitamin C Boosting Orange Julius

## Ingredients

- 1/3 cup orange juice
- ½ cup Greek Yogurt
- 1 medium orange, peeled
- 1 large banana, frozen
- 1 teaspoon vanilla extract
- 1 tbsp orange zest
- ½ cup ice
- Splash of milk of choice



## Directions:

1. Peel oranges and banana. Place all ingredients in a blender.
2. Blend well, until smooth and frothy. Add more milk for thinner consistency or more ice for a thicker consistency.

# Sources

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# Thanks!

**Any questions?**

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