

The Gut – Key to Your Health

Hayley MacLean
Sodexo Dietetic Intern
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Welcome!

Has anyone ever heard the term “gut health” before?

In what context did you hear it?



**GUT
HEALTH**

Objectives

- Explain what the gut microbiome is and its role in your health
- Identify 2-4 foods that are fermented or have probiotic bacteria
- Describe the difference between soluble and insoluble fiber

What is “gut health?”

- Gut: another word for digestive tract
- Responsible for digestion, absorption, and excretion
- Acts as a home for many types of microorganisms, part of the microbiome
 - Mostly found in the large intestine
- “Gut health” refers the state of balance of the microorganisms in the GI tract
- Individual microbiome makeup is unique, and dysregulation leads to health problems

What do we know about the microbiome?

- Collection of microorganisms living in the GI tract
- Includes at least 1000 strains of bacteria, viruses, fungi, and other microbes
- It is responsible for many functions including:
 - Aiding in digestion and absorption
 - Production of vitamins B and K
 - Manufacturing neurotransmitters
 - Supporting the immune system
 - Fermentation of indigestible fibers

Building your microbiome

- Begins in fetal development through the placental barrier
- The majority of colonization occurs during birth
- Continues to build until age 2-3 years
- One-third of the microbiota is the same in all people
- Two-thirds are specific to the individual

How does the gut microbiota evolve?



THE FIRST 1,000 DAYS OF LIFE

From conception until the 2nd year of life



PREGNANCY/
PRENATAL LIFE

FROM BIRTH
TO 2 YEARS



ADULTHOOD



ELDERLY

Contradictory findings regarding the impact of pregnancy on the gut microbiota.⁽¹⁾⁽²⁾



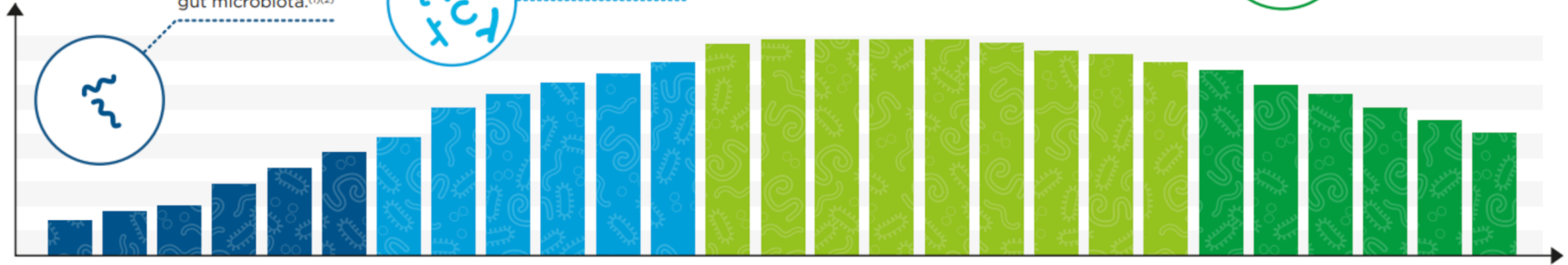
High richness, diversity and dominance of *Firmicutes* and *Bacteroidetes*.



The gut microbiota is quite stable.



Lower diversity and enrichment of potentially harmful bacterial groups.⁽³⁾



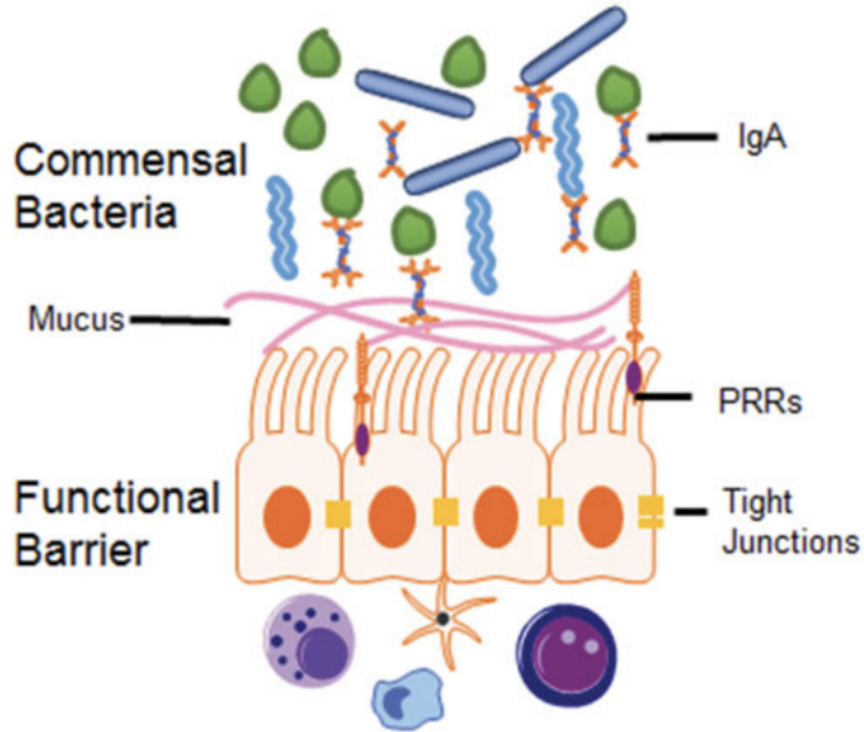
What affects gut health?

- Nutrition
- Environmental factors
- Genetics
- Emotions/stress
- Medications

Gut health disruption

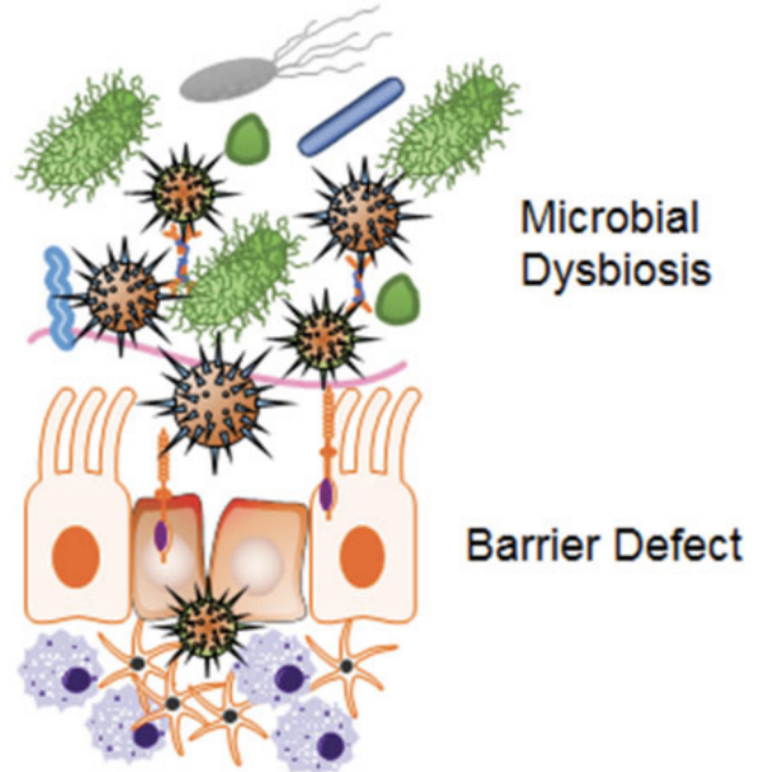
- Dysbiosis = lack of diversity, with harmful/opportunistic bacteria > beneficial bacteria
 - Common symptoms: bloating, gas, diarrhea, stomach pain, nausea
 - Can cause malabsorption
 - Can lower immune function
 - Has been linked to both psychological conditions and neurological conditions
 - Long-term poor gut health affects chronic conditions

Gut Homeostasis



Tolerant Immune Response

Dysbiosis



Barrier Defect

Dysregulated Immune Response

How you can maintain gut health

- Eat a varied and balanced diet, getting regular exercise, and staying hydrated
- Limit dairy, red and processed meats, and refined sugars
- Avoid smoking and excessive alcohol
- Avoid unnecessary medications
- Increase fiber intake
- Practice stress reduction

Diet and gut health

- Focus on a balanced, variety diets full of fresh, whole foods
- *Fruits*
- *Vegetables*
- *Healthy Fat*
- *Proteins*
- *Whole Grains/Starches*
- *Probiotics/Fermented*

Question time!

Do you take a probiotic supplement?

Why?

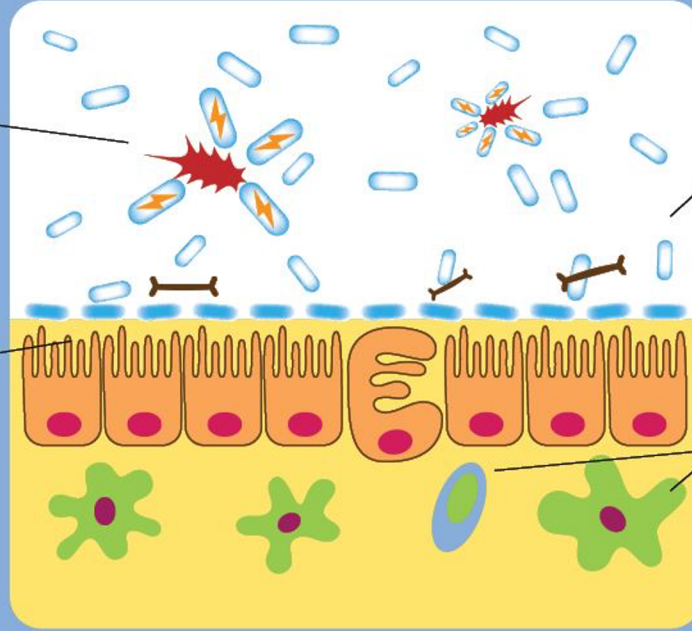


What about probiotic use?

- Research points to a positive effect on health
- Research is important before purchase
- May provide more benefit to those with GI disorders
- Could be a preventative measure to stop the onset or recurrence of disease
- Some research also suggests that probiotics can benefit mental, skin, and cardiovascular health
- 7 strains used most often in supplements

Probiotics in Action

Suppress the growth of pathogenic bacteria



Reduces the intestinal mucosa permeability

Protects receptors of intestinal cells from pathogenic bacteria

Stimulates the immune response, IgA synthesis

<https://www.chihealth.com/en/about-us/press-room/news-center/2019/probiotics-are-good-bacteria.html>

How to pick the best supplement

- Available in capsules, powders, liquids, etc.
 - At least 10 billion colony forming units
 - Look for supplements containing Lactobacillus, Bifidobacterium, or Saccharomyces boulardii
 - A variety of strains may have more of an impact
 - Cold-stored vs. shelf stable
 - '*Synbiotic*' supplements
- Consult your doctor or dietitian before taking

Probiotic supplements vs. foods

- Probiotic bacteria can also be found in foods
- Can help buffer during passage into the gut, provide nutrients, and promote more probiotic bacterial growth
- May be more widely accepted
- Foods have a larger variety of species
- Fermentation of foods increases nutrient availability in many vegetables

Examples of fermented/ probiotic foods

- Yogurt
- Kefir
- Sauerkraut
- Tempeh
- Kimchi
- Miso
- Kombucha
- Pickles (fermented)



What about fiber?

Soluble vs. insoluble

- Fiber is a part of plant foods that is largely undigested or absorbed
- Soluble fiber:
 - Dissolves in and retains water
 - Slows digestion
 - Some is fermented forming short chain fatty acids
 - Encourages the growth of good bacteria
- Insoluble fiber:
 - Does not dissolve in water
 - Has fecal bulking effect
- Recommended intake:
 - 38 g/day for men 19-50
 - 25 g/day for women 19-50

Food sources and benefits of soluble fiber

- Soluble:
 - Food sources: vegetables, fruits, barley, legumes, oats, oat-bran
 - Health benefits:
 - Decreases total blood cholesterol
 - Guards against diabetes
 - Prevents constipation
 - Helps manage IBS
 - May protect against colon cancer and gallstones

Food sources and benefits of insoluble fiber

- Insoluble:
 - Food sources: whole-wheat products, wheat and corn bran, and many vegetables including cauliflower, green beans, potatoes, and root veggie skins
 - Health benefits:
 - Prevents diverticular disease
 - Prevents constipation
 - May delay glucose absorption
 - Increases satiety
 - Lowers cholesterol
 - May protect against colon cancer

Conclusion

- Homeostasis of the gut is clearly important to our overall health, and can be easy to maintain with proper diet and lifestyle choices
- Probiotic supplements may be beneficial in encouraging gut health, but further studies must be completed
- As more research is done surrounding gut bacteria and probiotic use, our understanding of the role specific strains play in our body will continue to grow
- *What is one thing you will do to increase your gut health as a result of this presentation?*

Happy gut smoothies



Purple Passion Smoothie

- ¾ cup almond milk
- ¼ cup Greek yogurt
- 1 cup kale, chopped
- 1 frozen banana
- 1 cup frozen blueberries
- ¼ an avocado

Cinnamon and Sweet Smoothie

- ½ cup almond milk
- ½ cup kefir
- 1 cup spinach
- 1 frozen banana
- ½ teaspoon cinnamon
- 1 teaspoon honey

Pro-berry-otic Protein Smoothie

- ½ cup almond milk
- ½ cup Greek yogurt
- 1 frozen banana
- 1 cup frozen mixed berries
- 1 tablespoon flaxseed
- 1 scoop powder of your choice

Orange Immunity Smoothie

- 1 cup kefir
- 1 large carrot, peeled
- 1 large orange, peeled
- 1 tablespoon chia seeds
- 2-3 dates, pitted
- 1 teaspoon grated ginger

Interested to study
further?

Ask me for a list of
resources.

