TASTE THE RAINBOW – A HEALTHY GUT

HAVE YOU…..

- Taken antibiotics in the past two years?
- Used anti-inflammatory drugs such as aspirin or ibuprofen?
- Eaten processed foods?
- Drink sodas?
- Eaten foods with chemical additives?

Have you experienced…..

Inside the body

- Gas
- Bloating
- Constipation
- Diarrhea
- Heartburn

Outside the body

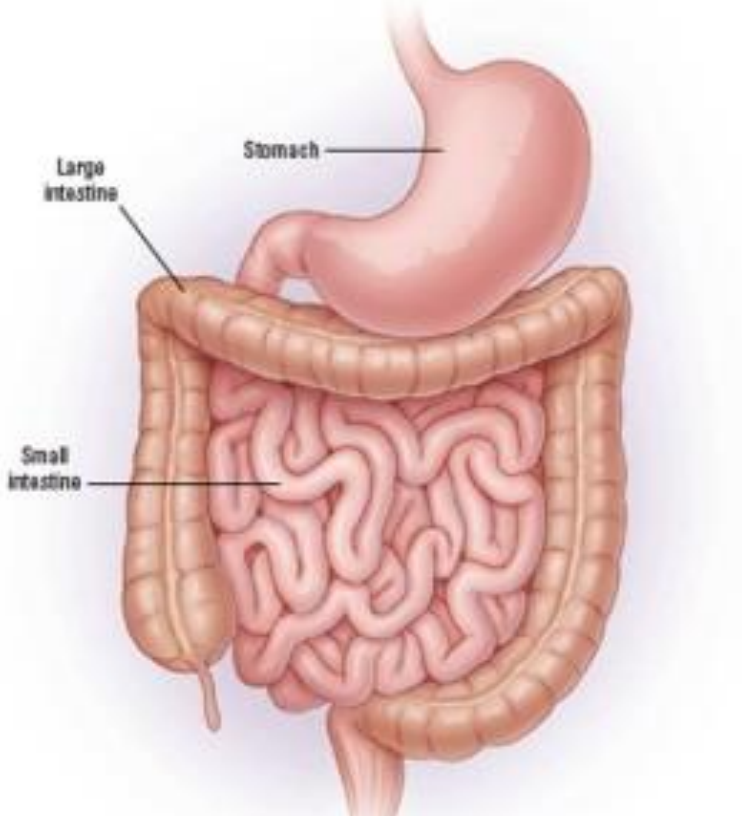
- Acne
- Rosacea
- Psorasis
- Eczema
- Depression
- Low energy
- Trouble with memory recall

What influences change in our gut bacteria?

- Diet
- Antibiotics
- Anti-inflammatories
- Chronic Stress
- Infection with various pathogens
- Possibly air pollution
- Holistic approach to health and disease

Let's review…
YOUR GUT – HOW DOES IT WORK?

- Carbohydrates – broken down in the mouth and small intestine into simple sugars
- Protein – broken down into amino acids in the stomach and small intestine
- Fat – broken down into fatty acids and glycerol in the intestine



How do good microbes in the gut promote health?

- They are:
- important to biological processes
- Produce essential vitamins that we cannot make on our own (folate, biotin, niacin, riboflavin)
- Help regulate our immune system
- Help regulate glucose levels and other aspects of our metabolism
- Protect us against disease causing microbes (shigella and salmonella)
- Microbiota – help balance the good and bad microbes

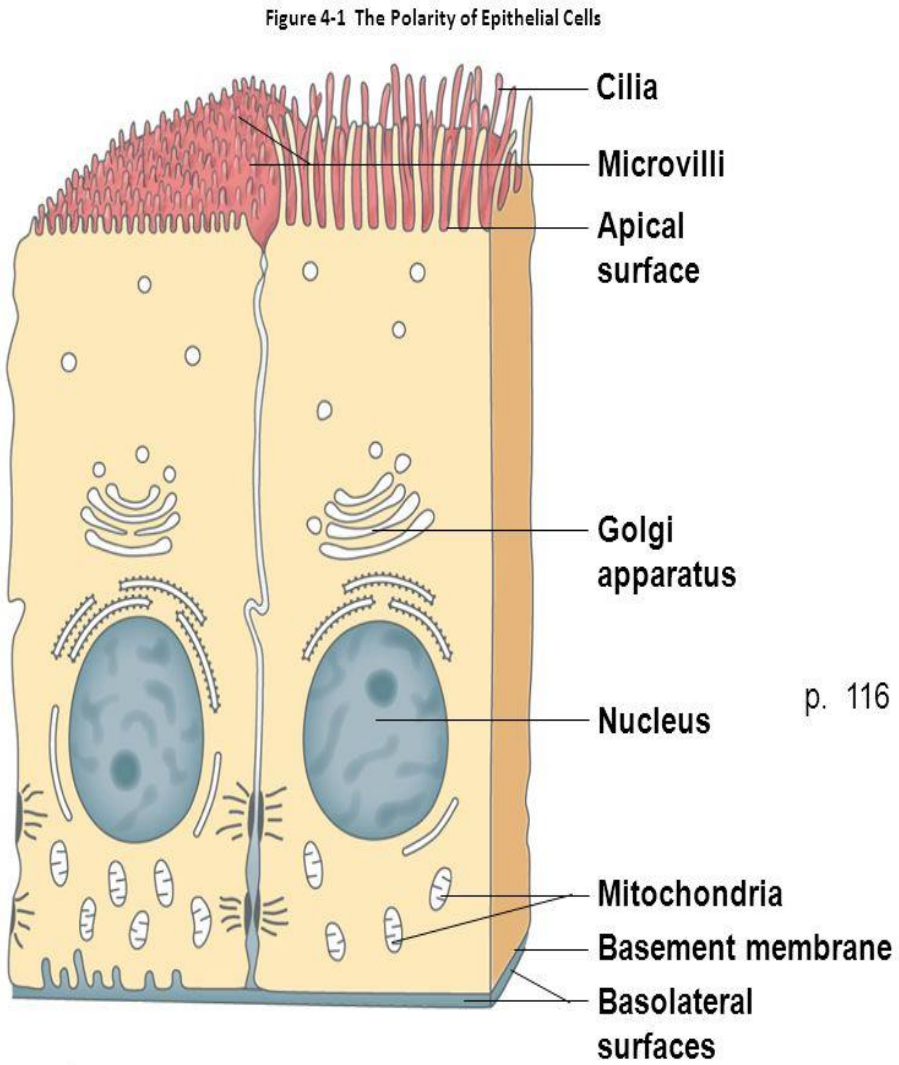
How does our diet help or hurt us?

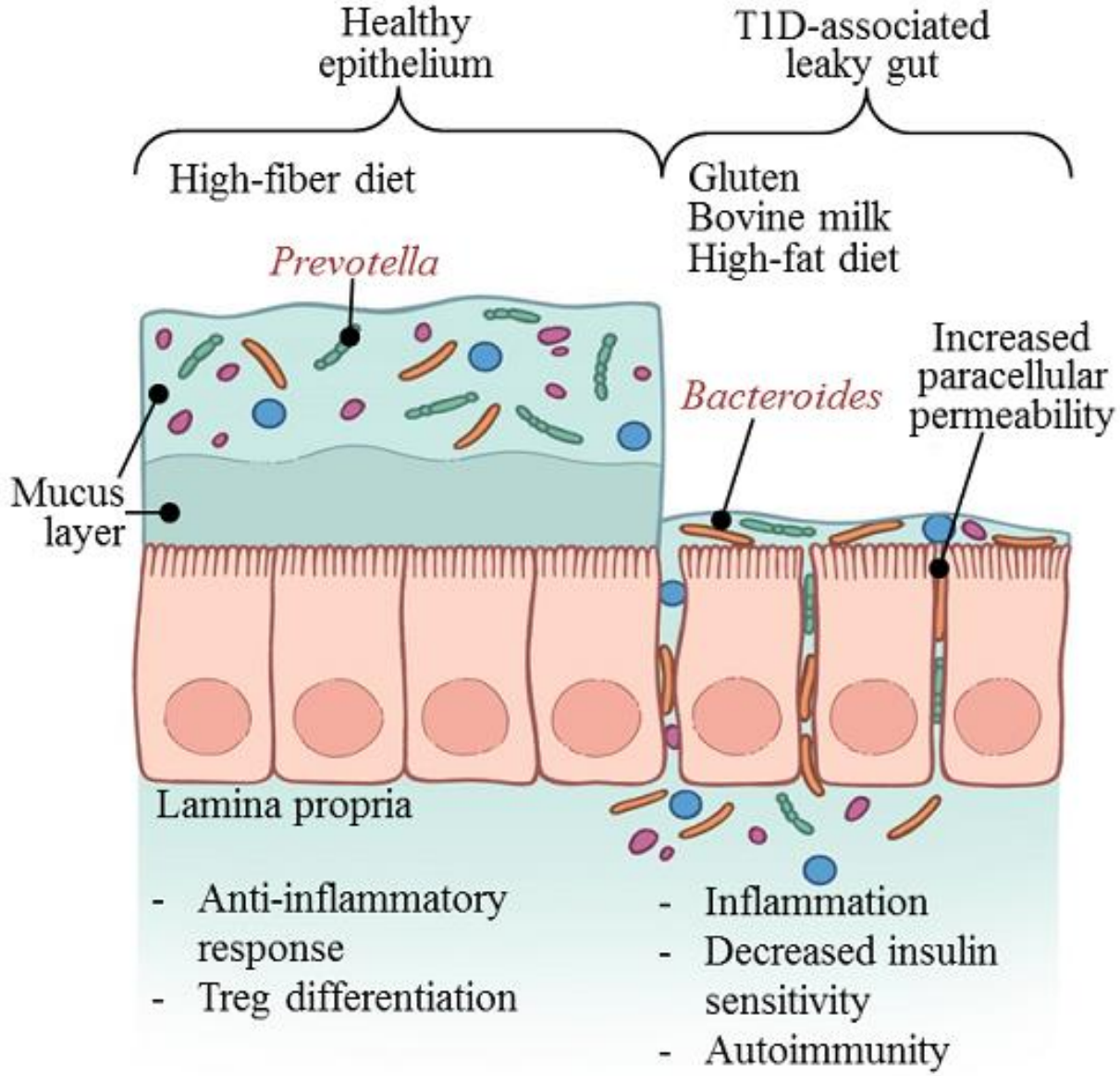
Large Intestine

- Simple sugars, proteins and fats are gone by large intestine
- Fiber - undigestable
- There are microorgranisms in large intestine that need dietary fiber to nourishes the cells that line the gi tract and shown to have potent inflammatory properties…

If we do not get fiber???

- The microorganisms feed on us!
- they will eat this mucous layer and exposes epithelial cells. Can lead to leaky gut



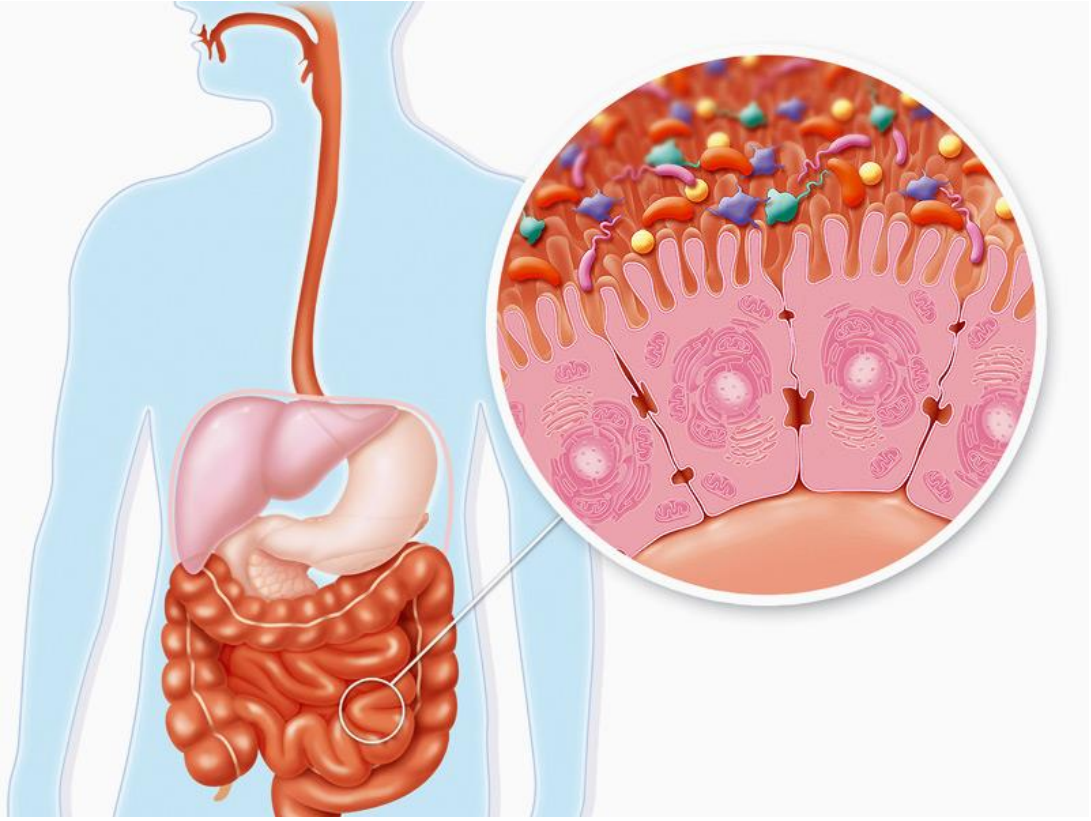

Healthy epithelium
T1D-associated leaky gut
High-fiber diet
Gluten
Bovine milk
High-fat diet
Prevotella
Bacteroides
Increased paracellular permeability
Mucus layer
Lamina propria
- Anti-inflammatory response
- Treg differentiation
- Inflammation
- Decreased insulin sensitivity
- Autoimmunity

What about processed foods?

- Processed foods – less diversity of the microbes and no way to reset them once its been lost

Antibiotics and Anti-inflammatories

- Continued exposure to antibiotics – can lead to changes that promote inflammation
- Enrichment for antibiotic resistant genes and decrease in biodiversity of gut microbiota
- One round kills good bacteria for a year!
- Continued exposure to antibiotics disrupts and leads to changes that can promote to inflammation and can be irreversibly changed!

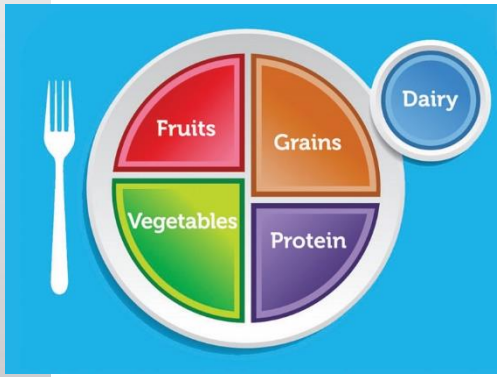


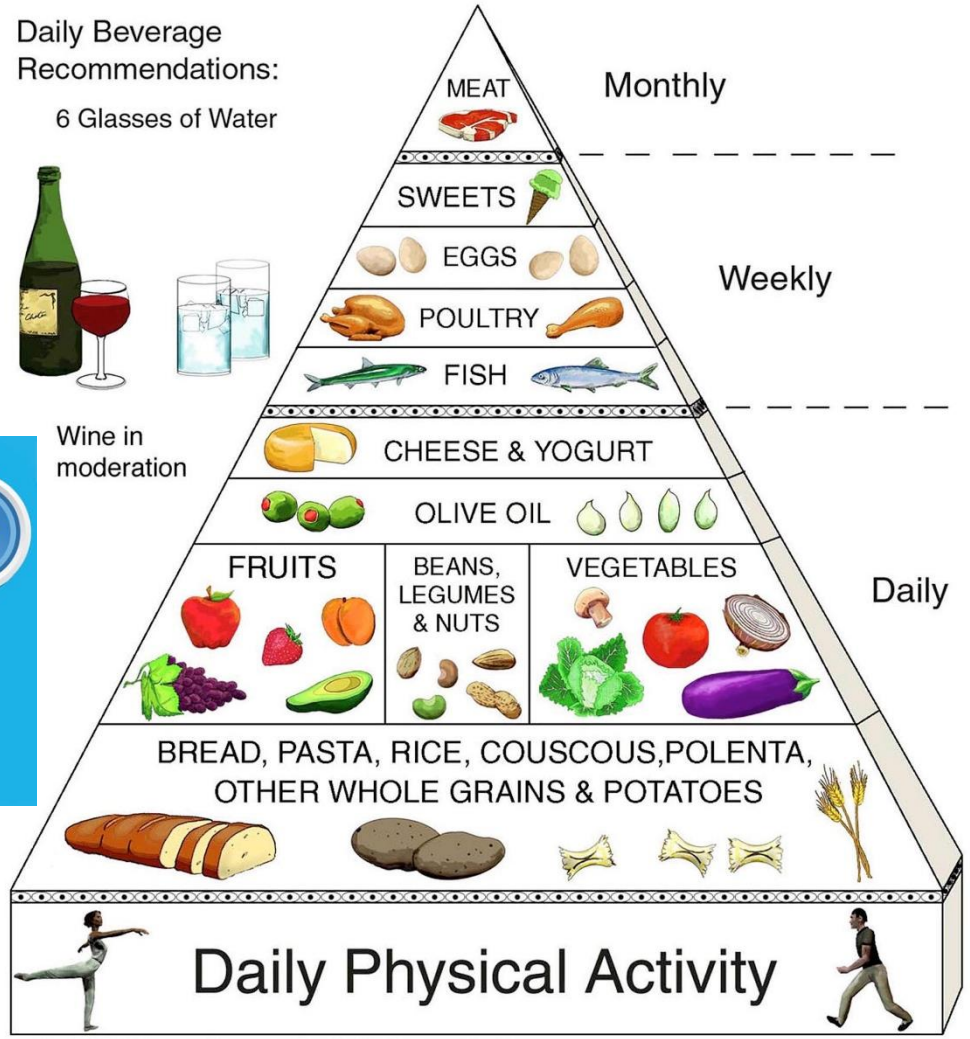
In summary…

- Your gut helps with your:
- Immune system
- Metabolsim
- Synthesis of some vitamins

- An unhealthy gut may lead to:
- Bowel disease
- Carcinogens
- Obesity
- Decreased immune function which can lead to many other things

What should we eat?





TASTE THE RAINBOW!

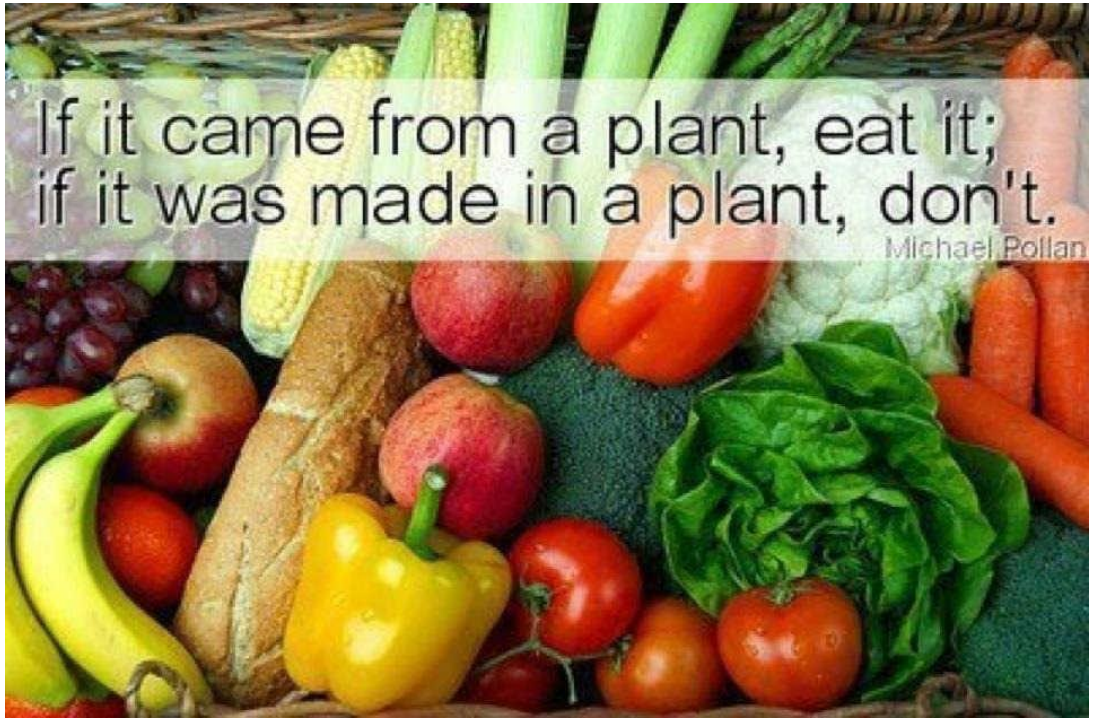
1. EAT A VARIETY OF FRUITS AND VEGETABLES
2. INCREASE FIBER
3. DECREASE PROCESSED FOODS, SUGAR AND SUGAR SUBSTITUTES
4. GET UP AND MOVE!

Assignments:

- What is the definition of processed foods?
- Name 10 non-processed foods
- Name the top 10 processed foods
- Poster

- What are prebiotics?
- What are probiotics
- Do they have a place in our diet?
- Name 10 prebiotics
- Name 10 probiotics

Use credentialed resources such as USDA, eatright.org, etc.



Assignments:

- What are the top 15 foods that you eat that are high in fiber?
- Write:

✓ the foods you eat and the serving size

✓ grams of fiber for the serving size

✓ the definition of a high fiber food

✓ the amount of fiber we should consume daily

- **Phytochemicals and antioxidants**
- Create a power point presentation that includes the following:
- The definition of phytonutrients and phytochemicals
- How do they work in the body?
- What types of phytonutrients are there and what foods contain phytochemicals (give a list plus a few pictures of the foods)
- Foods that contain phytonutrients

Cooking assignment

- Explanation of quinoa and pearl couscous
- Each group makes a 4 oz portion of quinoa OR couscous using vegetable or chicken stock
- Give them a list of foods they can add to it and discuss the size of their knife cuts, flavor etc
- 50 minutes total

- The following day:
- In class, students look up the nutrient composition for ½ cup cooked couscous and quinoa and include carbs, pro, fat, kcals
- Ask students which veggies they included and if they are:
- High in fiber, antioxidants, phytochemicals, and what main vitamins/minerals they contain