The Good, the Bad and the Ugly Microbiome and its Role in Disease

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My Journey
Unhealthy diet increase the risk of chronic diseases

What should I do to continue improving other people’s lives?

There is something else out there......
"Eat Real Food coming from the Earth, not coming from the box"
Food is Medicine
My Inspiration

• Mom was 34 years old, 5.5 feet and 180lb

• Mom diagnosed with Fibromyalgia and other conditions (pustules, migraines, depression, digestive problems)

• Natural treatment (healthy eating and lifestyle)

• Mom is 55 years old, 114lb, said bye to Fibromyalgia and feels better than ever!!!
“All disease begins in the gut”

- Hippocrates -

“The digestive system is like the second brain of the body, if the digestion fails everything fails”
Function of the Digestive System

Break down food into small molecules for absorption and use as fuel for all cells of the body
Digestive system

- Mouth
- Esophagus
- Liver
- Gallbladder
- Stomach
- Pancreas
- Small Intestine
- Large Intestine
- Anus
- Glands
Components regulating good digestion

- **Immune system** (70% is in the gut)
  - Innate Immune system: first response
  - Adaptive Immune system: Primed by the innate immune system and acquires memory

- **Nervous system** (2nd Brain of the Body)

- **Healthy Enterocytes**

- **Microbiome**
We are our bacteria

100 Trillion microbes!

Humans - 22,000 genes
Microbes - 9,000,000 genes
Microbiome

90% of the cells of our body are microbes!!!

Types of Microbes:

- Beneficial Microbes
- Opportunistic Microbes (*bacteria, fungi, virus, protozoa*)
- Ingested Transitional microbes
Each barrier site has specific microbiota

Belkaid. *Nature Immunology* 2013
Mother-to-child microbial transmission

Effect of maternal exposures
- Environment
  - Antisepsis
  - Antibiotics
  - Diet
- Other hosts
- Epigenetics

Dental amalgam
Bottle feeding

Oral (pre-mastication of food)
Mammary, through breastfeeding (selection)
Cutaneous (contact with skin)
Vaginal (passage through birth canal)

Early/extensive bathing
Early-life antibiotics
Caesarean section

Nature Reviews | Genetics
Function of the Gut Microbiota

- Protection against pathogen invasion
- Modulation of gut motility
- Homeostasis of the immune function
- Allergy prevention
- Carbohydrate fermentation
- Food digestion and energy extraction
- Production of vitamins B and K
- Ensure mucosal layer integrity
Factors that change the Gut microbiota

- Diet
- Antibiotics
- Genetics
- Age
- Physiology

Dysbiosis
Diseases linked to imbalance microbiome

- Irritable Bowel Syndrome (IBS)
- Inflammatory Bowel
  - Crohn’s
  - Ulcerative Colitis
- Celiac Disease and Food sensitivities
- Diverticulitis
- Eosinophilic esophagitis
- GI Cancers
- Gallstones
- Liver Disease (NASH)
AMERICAN DIET = “Food like products”

What the world Eats. Peter Menzel
Man Eating Packs of Sugar- NYC Campaign

4 gr of sugar = 1 tsp
Energy balance and exercise—Calories in/Calories out

Obesity occurs when a person consumes more calories from food than he or she burns. *-The National Institutes of Health-*
Energy balance is impossible

Typical American food intake

2700 Kcal/day → 1,000,000 Kcal/yr → 10 tons Kcal/decade

How accurately we have to match calories in/calories out to make sure we don’t get 20 lbs in a decade?

20 cal/day

\[
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\]
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It is not about quantity, it is about quality!

Sugar affects our Gut – weight gain
- Blood sugar spikes
- Sugar addiction
- Lack of Energy
- Dysbiosis
- Candida overgrowth
- Leaky gut syndrome
- Hyperlipidemia
- Obesity
- Type 2 Diabetes
Normal Gut environment
Healthy Gut environment

- Macrophage
- B cell
- T cell
- DC
- Mast cells
Leaky Gut Syndrome

Stress
Pathogens
Drugs
Gluten
Toxins

Inflammation
Chronic Fatigue  
Lack of energy  
Sleep problems  
Hormone imbalance  
Addictions

Nutritional deficiencies  
Changes in weight  
Arthritis  
IBD  
Anxiety  
Food allergies/sensitivities

Joint inflammation  
Depression  
ADHD  
Epilepsy

Skin problems  
Lack of energy  
Allergy

Autism  
Depression  
ADHD  
Epilepsy

Minimal hepatic encephalopathy  
Familial Mediterranean fever

Atherosclerosis  
Liver disease  
Pancreatitis

Skin problems  
Diabetes  
Burn injury

Obesity  
Joint inflammation  
Fibromyalgia
Unhealthy diet increase the risk of atherosclerosis

Lipids accumulation within the aorta

Inflammation
CVD
Symptoms related to Leaky Gut Syndrome

- Bloating and discomfort
- Gas
- Abdominal Pain
- Constipation/Diarrhea
- Bad Breath
- Nausea
- Heartburn
- Food allergies and sensitivities
- Skin conditions
- Craving for sugar
- Nutritional deficiencies
- Changes in weight
- Sleep deprivation
- Chronic fatigue
- Lack of Energy
- Hormone imbalance
- Chronic infections (e.g. Candida overgrowth)
- Headaches/Migraines
- Anxiety
Candida Overgrowth - Symptoms

- Gut: Inflammation of lining (Crohn’s, Colitis, IBS)

- Body Cavities: Asthma, Sinusitis, Ear Infection, Vaginal infection

- Systemic: Depression, Mood changes, Cravings for sugar, ADHD, OCD, Memory loss

- Autoimmune Diseases: Autism, Arthritis, Lupus, Multiple Sclerosis, Chronic Fatigue, Fibromyalgia, Gluten Intolerance

- Important to decrease sugars in your diet. Sugar feeds Candida!
Stool tests: Identify the type of microbes in your gut, so it is easier to find the treatment. Determine any bacteria/fungi/parasite infection and/or overgrowth

- **DRG lab DNA/PCR Stool Test:** *H. pylori*
- **BioHealth #401H:** *H. pylori*, ova and parasites, *Cryptosporidium parvum/Entamoeba histolytica/Giardia lamblia* antigens, bacteria, fungi and *Clostridium difficile colitis* toxins A and B.
- **Doctor’s Data Parasitology X3:** aerobic and anaerobic bacteria, yeast and parasites

**American Gut-Human Food project:** Research program for understanding the trillions of microbes that inhabits each of our bodies
**Know Your Poops**

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2</td>
<td>Separate hard lumps, like nuts (hard to pass)</td>
</tr>
<tr>
<td>3/4</td>
<td>Sausage-shaped but lumpy</td>
</tr>
<tr>
<td>5/6/7</td>
<td>Like a sausage but with cracks on the surface</td>
</tr>
<tr>
<td>4</td>
<td>Like a sausage or snake, smooth and soft</td>
</tr>
<tr>
<td>5</td>
<td>Soft blobs with clear-cut edges</td>
</tr>
<tr>
<td>6</td>
<td>Fluffy pieces with ragged edges, a mushy stool</td>
</tr>
<tr>
<td>7</td>
<td>Watery, no solid pieces. Entirely Liquid</td>
</tr>
</tbody>
</table>

- Types 1/2: Constipation
- Type 3/4: Ideal stools
- Type 5/6/7: Diarrhea
Test/Diagnosis

- **SIBO** (small intestine bacteria overgrowth) breath test

- **Homemade Candida test**
  - First thing in the morning, before you put anything in your mouth, spit some saliva into a clear glass with room temperature filtered water. Check the water every 15 minutes or so for up to one hour.
Other tools/tests

- Food diary
- Questionnaires
- Food intolerances (IgG) and allergies (IgE and histamine)
- Celiac profile and gluten sensitivity test (IgA and IgA specific antibodies, genetic test and biopsy of the small intestine)
How to Restore the Inner Ecosystem and Heal our Gut?

- Fecal Transplant
- Nutrition and lifestyle changes
Fecal Microbiota Transplant

- Process of transplantation of fecal bacteria from a healthy individual into a recipient to restore the colonic microflora
- FMT has been used experimentally to treat other gastrointestinal diseases, including colitis, constipation, IBS, multiple sclerosis and Parkinson's.

Fecal Microbiota Transplant

- Experimental approaches:

*Fighting Obesity with Bacteria. Science. 2013*
Important Concepts

Bio-individuality: each person has unique food and lifestyle needs. One person’s food is another person’s poison, and that’s why fad diets tend to fail in the long run.

Primary Food: Healthy relationships, a fulfilling career, regular physical activity and a spiritual awareness are essential forms of nourishment. If primary food flows then secondary food flows.

Secondary Food: Nutrition
Nutrition and Lifestyle changes to heal your Gut

- **Control portion**
  - Use small containers
  - Split an entrée
  - Have small meals through the day
  - Drink a glass of water before meals
  - 50% plate should be green
  - Use dessert plates

- **Mindful eating.** Eat slowly and consciously. It takes time for the body’s hunger signals to shut down after eating, so wait 20 minutes before going back for seconds.

- **Eat dinner at least 3 hour before bed time**

- **Chew your Food!** Digestion begins in the mouth
  
  chew 20-30 times per bite!

**12 MOST CONTAMINATED DIRTY DOZEN PLUS™**

- APPLES
- CELERY
- CHERRY TOMATOES
- CUCUMBERS
- GRAPEFRUIT
- HOT PEPPERS
- NECTARINES (IMPORTED)
- PEACHES
- POTATOES
- SPINACH
- STRAWBERRIES
- SWEET BELL PEPPERS
- KALE / COLLARD GREENS +
- SUMMER SQUASH +

**15 LEAST CONTAMINATED CLEAN 15™**

- ASPARAGUS
- AVOCADOS
- CABBAGE
- CANTALOUPE
- SWEET CORN
- EGGPLANT
- GRAPEFRUIT
- KIWI
- MANGOS
- MUSHROOMS
- ONIONS
- PAPAYAS
- PINEAPPLES
- SWEET PEAS (FROZEN)
- SWEET POTATOES

• **Eat clean** (WHOLE FOODS): “what your brain doesn’t process, your digestive system either”
Nutrition and Lifestyle changes to heal your Gut

- Avoid Sweet and Starchy Foods
- No Artificial Sweeteners
- No Processed Foods and preservatives/artificial ingredients
- Avoid Antibiotics
- Filter your Water and Drink at least 2L
Food combining Chart

**HIGH-STARCH FOODS**
- Grains
- Potatoes
- Lima beans
- Artichokes
- Brown rice
- Yams
- Pumpkin
- Corn
- Beets
- Pasta

**PROTEINS**
- Cheese
- Lentils
- Nuts
- Dried beans
- Chicken
- Dried peas
- Beef
- Turkey
- Fish
- Milk

**GREENS AND LOW-STARCH VEGETABLES**
- Asparagus
- Peppers
- Watercress
- Rhubarb
- Broccoli
- Kohlrabi
- Cucumbers
- Radishes
- Eggplant
- Spinach
- Celery
- Leeks

**NOTES:**
- **NO** combination is not recommended.
- **YES** combinations are encouraged for better digestion.
Acid/Alkaline

Robert O. Young and Shelley Redford Young’s The pH Miracle: Balance Your Diet, Reclaim Your Health
80/20 Rules

Rule 1

Stop Eating when you are 80% full

Rule 2

80%
Non-starchy Land and ocean vegetables

20%
Protein or grains or starchy vegetables
Nutrition and Lifestyle changes to heal your Gut

- Proper individualized **anti-inflammatory diet**

- **The 4 R Program**
  - Remove
  - Replace
  - Reinoculate
  - Repair
The 4 R Program - Remove

- Remove the food that triggers inflammation or other problem with an elimination diet
- Remove the bad bacteria, yeast or parasite

How to do it?

- Oil pulling with coconut oil – oral detoxification, fights bad bacteria, heals gums, decreases gum inflammation, bad breath, teeth whitening
- Take Omega 3 and omega 6
- Elimination Diet
Elimination Diet

**Why?**
- **Foods, environment and lifestyle make us toxic.** Environmental chemicals in solvents, plastics, and adhesives; poisons in makeup, moisturizers, nail polish, hair dyes, and shampoos; pesticides, herbicides, parasites in soil, food, and water; ingestible chemicals in junk and processed foods; chronic stress

**Beneficial effects**
- Eliminates toxins, reduces inflammation, decreases bad bacteria overgrowth and food sensitivities
- **Detoxifies the liver:** Every toxin you come into contact with must be filtered through the liver. If the liver becomes overburdened, it loses its ability to function efficiently—serious health problems
- **Reduces weight naturally**

**Testing for food**
- Remove gluten, dairy, soy, corn and eggs for 3 weeks
- Reintroduce 1 at a time every 4 days – test reaction
- Eat the food for 2-3 days
The 4 R Program - Replace

- **Replace** enzymes and Hydrochloric acid to improve digestion

**How to do it?**

- **Betain HCl** (restores Hydrochloric Acid) or **Pepsin**

- **Raw Apple Cider Vinegar** – 2 tbsp in 8 oz. water 20 minutes before meal

- **Digestive enzymes** – proteases, lipases, amylases. Take 1-2 capsules at the beginning of each meal
Reinoculate and Rebalance with good bacteria

How to do it?

**Probiotics** – *Lactobacillus* and *Bifidobacterium*. Take 1 capsule (no less than 15 billion bacteria) 30 minutes before breakfast.

**Prebiotic** – nutrients for the probiotics (tomatoes, garlic, onions, radishes, leeks, asparagus, and Jerusalem artichokes, stalks).
The 4 R Program - Repair

- Repair the gut lining

How to do it?

- L-Glutamine – amino acid that decreases inflammation and repairs the gut lining

- Licorice Root – herb that balance cortisol levels, produce stomach acid and keep the mucosal lining

- Coconut Oil

- Aloe Vera

- Diet rich in whole foods (50% green leafy vegetables)
Foods that Heal Your Gut

- Ocean/Land Vegetables
- Low sugary Fruits
- Simple Protein
  - Glycine and Proline
- Simple Fat (including Saturated Fat)
- Simple Carbs
- Predigested and Easy to Digest Food
Foods that Heal Your Gut

- Raw-soaked/Sprouted Nuts and Seeds
- Lemon Water
- Apple Cider Vinegar
- Aloe Vera
- Avocado
- Fermented Food (kimchi, sauerkraut)
- Coconut products
- Bone Broth
- Kefir
Homemade Sauerkraut

- 1 medium head green cabbage (about 3 pounds)
- 1 1/2 tablespoons Celtic sea salt
Homemade Bone Broth

- Bones, joints and meat (lamb, pork, beef, chicken)
- 4 Tbsp. apple cider vinegar
- Celery, Onion, Carrots, Garlic
- 4-5 Peppercorns
- Salt
Homemade Kefir (Dairy or Coconut)

- About 1 tablespoon of kefir culture
- Fresh milk or coconut water from 3 youth coconuts
Does it mean we have to suffer when we eat?
Do we have to stop eating foods we love if we want to eat healthy?

NO!!!
CHOCOLATE IS GOOD!!!
Dairy/Sugar Free Hot Chocolate

- 2 cups almond milk
- ¼ cup raw cacao
- 1 tsp of cinnamon
- Stevia (Optional)
Eat Green
Homemade Coconut flour pancakes

Coconut flour/ hazelnuts/eggs/ stevia/ vanilla/baking soda/salt/almond milk
Healthy and tasty snacks
Cook with Avocados!!
Homemade Bread

Banana Bread

Basic Bread
Homemade Tropical Ice Cream

Frozen mango/frozen banana/almond butter/almond milk
What is Your Gut telling You?

Be a detective and find out which food is best for your body!
Gut - Brain Axis

- Stress
- Corticosteroids
- Immune system activation
- Microbiome imbalance
- Leaky Gut
How to control stress?

- Do something fun every week!
- Don’t look at any kind of screen 30 minutes before bed time and read some book that you like and/or is positive.
- Wake up in the morning, say something you are grateful for and move your body in the way you love (yoga, dancing, taking a walk, running...)
- Relaxation massage or Reiki Treatment
- Go to the sauna: help release toxins and relax
- Lavender Bath: 2 cups Epsom salts, 1 cup baking soda, hot water and 8 drops lavender oil. Soak for 20 minutes.
- Meditation
- Breathing exercises
Healthy Microbiome/Healthy You

Go and take action.........

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