

MARCH

The Human Microbiome



5 FACTS ABOUT THE GUT MICROBIOME

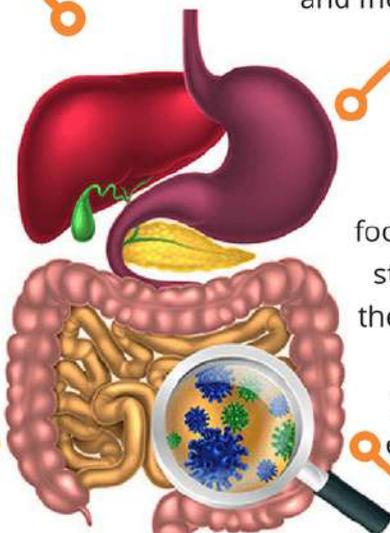
There are 10x the number of microbial cells in the human gut than in the whole human body.



Gut bacteria are involved in harvesting energy from food, balancing the good versus bad bacterial composition and metabolic functions



Diet Plays a Role!
The gut microbiome of Urban populations is less diverse than that of people from rural, less developed populations.



Fibers – including food-based resistant starch, are some of the key nutrients for promoting fermentation and ensuring a diverse microbiome.



Gut microbiota differ in obese individuals versus lean individuals, but the significance of these differences is not yet understood



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what is your GUT MICROBIOME?

Trillions of microbes exist in your intestines and on your skin. Most of the microbes in your intestines are found in a "pocket" of your large intestine called the cecum, and they are referred to as the GUT MICROBIOME.

There are up to 1,000 species of bacteria in the human gut microbiome, and each of them plays a different role in your body. Most of them are extremely important for your health, while others may cause disease. Altogether, these microbes may weigh as much as 2–5 pounds (1–2 kg), which is roughly the weight of your brain. Together, they function as an extra organ in your body and play a huge role in your health and wellbeing.

Your gut health has an impact on your:

- Heart Health
- Weight
- Blood Sugar & Risk of Type 1 & 2 Diabetes
- Brain Health
- Mood & Stress Level
- Immune System

THERE ARE MORE BACTERIAL CELLS IN YOUR BODY THAN HUMAN CELLS.

There are roughly 40 trillion bacterial cells in your body and only 30 trillion human cells. That means you are more bacteria than human

THE GUT BRAIN AXIS

Research has revealed that the health of our gut and brain are intricately linked. Here's a few ways in which one may affect the other...

Stress & Anxiety
can contribute to, or cause, conditions such as IBS.¹

Sleep
A study in elderly patients showed that those taking probiotics, had improved quality of sleep.²

A Brain Of Its Own
The enteric nervous system is located in the gut, and is often referred to as the second brain.

"Go with your gut feeling"
95% of the body's serotonin (happy hormone) is stored in your gut.

Friendly bacteria
Strains such as *L. acidophilus* Rosell-52 & *B. longum* Rosell-175, have been shown in small clinical trials to help those suffering with depression.³

5 THINGS YOU *need to know* ABOUT YOUR GUT HEALTH

1. JUST LIKE A FINGERPRINT, EVERYONE'S MICROBIOME IS UNIQUE

Your microbiome consists of 10 to 100 trillion microbes primarily in your gut. From before birth, we're colonized by an army of microbes—bacteria, yeast and even viruses. It helps to create a protective barrier that defends your body against foreign substances and allergens. Your gut microbiome reacts to the world around and within you, and as a result, your microbiome is unique and distinct, like a fingerprint.

2. YOU HAVE TO CULTIVATE YOUR GUT FLORA

Your gut microbiome is a dynamic, living thing that needs to be tended to, just like a garden. Cultivate your good microbes with a nutritious, varied whole food diet rich in fruits and vegetables and fermented foods. Fiber and other complex carbs like resistant starch (think bananas, plantains, beans and sweet potatoes) aren't absorbed or digested in your gut. Instead, they travel through the small and large intestines and encourage the growth of beneficial bacterial flora.

3. WHAT HAPPENS IN YOUR GUT DOESN'T STAY IN YOUR GUT

While you might associate your gut only with digestion of food and absorption of nutrients, it does a lot more than that. Most importantly, it's the largest organ of the immune system with over two-thirds of our lymphocytes (type of white blood cell responsible for immunity) found in the lining of the small intestine. Thus, the health of our gut impacts our nutrition, allergy, skin, immune response, metabolism, sleep and mood.

4. THERE'S A LINK BETWEEN YOUR GUT AND ALLERGY & IMMUNITY

Allergies start in your gut. The problem arises when your gut becomes "leaky": thanks to the depletion of beneficial intestinal microbes, your gut becomes more permeable and absorbs more gut-derived toxins and food-derived allergens than normal, which can lead to allergic sensitization to food protein, as well as conditions like inflammatory bowel disease. When you ingest those allergens again, it leads to a vicious cycle that further inflames the intestinal lining.

5. GUT BACTERIA CAN INFLUENCE YOUR MOOD, THOUGHTS & BRAIN

90 percent of serotonin is manufactured in the digestive tract and not the brain. Many antidepressants work by increasing serotonin. Scientists have found that gut bacteria produce many other neurotransmitters such as dopamine, norepinephrine, acetylcholine, and GABA, which are critical for mood, anxiety, concentration, reward, and motivation. The gut microbiome can cause changes in how our brains react.

what is harming YOUR GUT HEALTH?

LACK OF PREBIOTICS

Prebiotics are a type of fiber that passes through the body undigested and promotes the growth and activity of friendly gut bacteria.

Foods high in prebiotics include: Lentils, Chickpeas and Beans, Oats, Bananas, Artichokes, Asparagus, Garlic, Leeks, Onions, Nuts

ANTIBIOTIC USE

Antibiotics affect both good and bad bacteria. In fact, even a single antibiotic treatment can lead to harmful changes in the composition and diversity of the gut flora. antibiotics can lead to long-term alterations in the gut flora. After completing a dose of antibiotics, most bacteria return after 1-4 weeks, but their numbers often don't return to previous levels.

OTHER MEDICATIONS

Particularly NSAIDS like aspirin, ibuprofen and naproxen-type pain relievers, have been shown to reduce levels of good bacteria in your GI tract, thus increasing intestinal permeability.

DRINKING TOO MUCH ALCOHOL

In terms of gut health, chronic alcohol consumption can cause serious problems, including dysbiosis by decreasing the amount of beneficial gut bacteria.

TOO MUCH STRESS

Being healthy isn't only about diet, physical activity and adequate sleep. High stress levels can also have harmful effects on the body. In the gut, stress can increase sensitivity, reduce blood flow and alter the gut bacteria.

PREBIOTICS VS. PROBIOTICS

Non-living and non-active fibers that feed the good gut bacteria.

Without eating these regularly the probiotics in our gut cannot flourish as they have nothing to "feed on"

Found in:
Garlic, Onion,
Leeks, Asparagus,
Barley, Bananas,
Oats, Apples,
Cocoa, Flaxseeds

Living microorganisms (bacteria and yeast) that lives inside of us

Promotes a healthy gut, digestion, mind and skin. We need more good bacteria to outweigh the bad.

Found in:
Nondairy Yogurts,
Pickles, Kimich,
Kombucha, Miso,
Sauerkraut,
Tempeh

how to IMPROVE GUT HEALTH

EAT A DIVERSE RANGE OF FOOD

This can lead to a diverse microbiome, which is an indicator of good gut health. In particular, legumes, beans and fruit contain lots of fiber and can promote the growth of healthy Bifidobacteria

EAT FERMENTED FOODS

Fermented foods such as yogurt, sauerkraut and kefir all contain healthy bacteria, mainly Lactobacilli, and can reduce the amount of disease-causing species in the gut

TAKE A PROBIOTIC SUPPLEMENT

Probiotics are live bacteria that can help restore the gut to a healthy state after dysbiosis. They do this by "reseed" it with healthy microbes

EAT PREBIOTIC FOODS

Prebiotics are a type of fiber that stimulates the growth of healthy bacteria. Prebiotic-rich foods include artichokes, bananas, asparagus, oats and apples

5 WAYS TO IMPROVE DIGESTION



BE MINDFUL OF WHEN YOU EAT



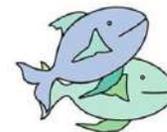
CONSIDER DIGESTIVE ENZYMES



REDUCE STRESS



EXERCISE REGULARLY



EAT A GUT-SUPPORTING DIET

@DrPedre

GET GOOD SLEEP

7-8 hours of sleep is crucial to enhancing gut health. Turn off all electronics at least one hour prior to getting in bed. Maybe even leave the phone in a completely separate room while you sleep.

LOWER STRESS LEVELS

Begin a mindfulness practice, make yoga a part of your weekly routine, do things you enjoy, and/or schedule time to truly unwind and relax at least once a week.

BRAIN POWER breathwork

WHAT IS IT?

Breathwork refers to any type of breathing exercises or techniques. People often perform them to improve mental, physical, and spiritual well-being. During breathwork you intentionally change your breathing pattern. There are many forms of breathwork therapy that involve breathing in a conscious and systematic way. Many people find breathwork promotes deep relaxation or leaves them feeling energized.

WHAT IS THE DIFFERENCE BETWEEN BREATHWORK AND MEDITATION?

The breath is a tool that you are able to access at any moment. Breath is our life source, and it's the easiest thing to leverage to help calm the mind and regulate the nervous system - and you don't have to sit in a dimly lit room in an upright position or attend a yoga class to practice it. You can implement the power of breathwork while sitting at your desk, watching TV or while out to dinner with your family.

SIMPLE BREATHWORK EXERCISE: ALTERNATE NOSTRIL BREATHING

- FIRST:** Sit up straight with your eyes closed.

- STEP 1** Using the right hand, close off the left nostril with your ring finger.

- STEP 2** Slowly inhale through the right nostril, gently expanding the abdomen and then the lungs.

- STEP 3** Release the left nostril, and with your thumb, close off the right.

- STEP 4** Slowly exhale through the left nostril as you release the lungs and then the abdomen.

- STEP 5** Reverse the procedure, inhaling on the left nostril and exhaling on the right.

Do nine full breaths. (One full breath is in right, out left, then in left, out right.)



NATIONAL NUTRITION MONTH

WEEKLY KEY MESSAGING

WEEK 1: EAT A VARIETY OF NUTRITIOUS FOODS EVERY DAY!

- Include healthful foods from all food groups
- Hydrate healthfully
- Learn how to read Nutrition Facts Panels
- Practice portion control
- Take time to enjoy your food

WEEK 2: PLAN YOUR MEALS EACH WEEK!

- Use grocery list to shop for healthful foods
- Be menu-savvy when dining out
- Choose healthful recipes to make during the week
- Enjoy healthful eating at school and at work
- Plan healthful eating while traveling

WEEK 3: LEARN SKILLS TO CREATE TASTY MEALS

- Keep healthful ingredients on hand
- Practice proper home food safety
- Share meals together as a family when possible
- Reduce food waste
- Try new flavors and foods

WEEK 4: CONSULT A REGISTERED DIETICIAN NUTRITIONIST (RDN)

- Ask a doctor for a referral to an RDN
- Receive personalized nutrition advice to meet your goals
- Meet RDNs in a variety of settings throughout the community
- Find an RDN who is specialized to serve your unique needs
- Thrive through the transformative power of food and nutrition

EAT RIGHT



BITE BY BITE

National Nutrition Month®
March 2020

eat right. Academy of Nutrition
and Dietetics

IDEAS TO GET INVOLVED IN NATIONAL NUTRITION MONTH

[HTTPS://WWW.EATRIGHT.ORG/FOOD/RESOURCES/NATIONAL-NUTRITION-MONTH/IDEAS-TO-GET-INVOLVED-IN-NNM](https://www.eatright.org/food/resources/national-nutrition-month/ideas-to-get-involved-in-nnm)

NOURISH

20 MIN HONEY SESAME CHICKEN

Recipe Adapted From: Racael's Good Eats



ingredients

- 2 tbsp avocado or extra virgin olive oil
- 1/2 cup onion, diced
- 1/2 tbsp minced garlic
- 3 large organic chicken breasts, trimmed and cubed
- 1/3 cup coconut aminos (soy-free alternative to soy sauce)
- 2 tbsp raw or manuka honey
- 2 tbsp sesame oil
- 1/4 cup water
- 1 tbsp arrowroot starch (or sub cornstarch)
- 1/2 cup chopped green onion
- 2 tbsp sesame seeds

recipe preparation

- In a large bowl, let cubed chicken marinate with 1-2 tbsp oil, salt and pepper until your skillet is ready.
- In a large pot or skillet, heat oil until hot, but not smoking. Add diced onion and garlic, and cook until onions are translucent, stirring every few minutes. Add your chicken and spread out evenly so it can brown.
- Once almost fully cooked, add your other ingredients: coconut aminos, honey, sesame oil and water, and stir. Separately in a small bowl, add a few tablespoons of water and 1 tbsp arrowroot or cornstarch (to thicken the sauce). Stir until completely dissolved before adding to your skillet. Give everything another good stir and let heat on medium for 5-7 minutes, covered.
- Remove from heat, add 1/4 cup chopped green onion and 1 tbsp sesame seeds to skillet and stir. Serve over rice with sauteed broccolini and another sprinkle of green onion and sesame seeds.

NOURISH

GRILLED CAULIFLOWER STEAKS WITH HERB SAUCE

Recipe By: Rachael's Good Eats



ingredients

HERB SAUCE

- 1 cup packed parsley
- 1 cup packed cilantro
- ½ cup olive oil
- 1 lime juiced
- 2 tablespoons chopped red onion
- ¼ teaspoon red pepper flakes
- ½ teaspoon ground pepper
- ½ teaspoon sea salt

CAULIFLOWER

- 1 large head cauliflower
- ½ teaspoon cumin
- ½ teaspoon chili powder
- 2 tablespoons chopped cilantro
- Salt and pepper to taste

recipe preparation

- To make the herb sauce, combine all ingredients in a food processor or blender until well combined.
- Fire up the grill to medium heat. Slice cauliflower in half down the middle from top to bottom. Take one of the halves and make another ½- to 1-inch cut horizontally to form a large, flat cauliflower "steak." Continue this step until you have used up all of the cauliflower.
- Spray both sides of the cauliflower steaks with olive oil and squeeze any remaining lime juice over the top. Season with salt, pepper, cumin, chili powder, and chopped cilantro.
- Place on the grill for about 10 minutes, or until tender, then flip to cook another 5 minutes. Remove from the grill and drizzle the herb sauce on top.