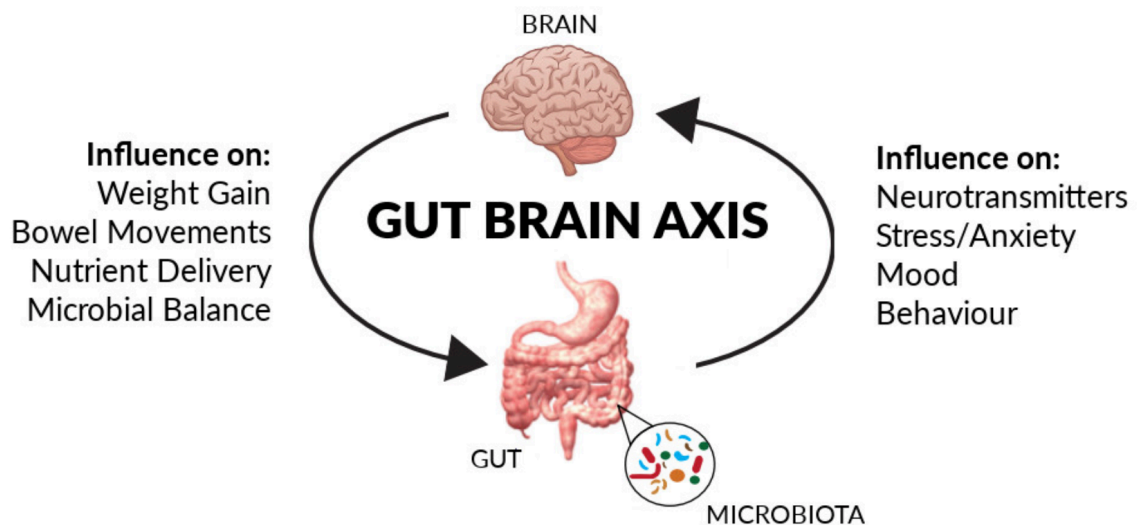




## THE GUT-BRAIN CONNECTION: HOW TO FEED YOUR BRAIN

If there was ever a call for digestive health, this is it. It's true your gut is considered your "second brain." There is no denying it anymore and because of the new scientific discoveries about the vagus nerve, the enteric nervous system, and the amazing influence your gut microbes can have, it's no wonder what you eat feeds not only your body but can directly affect your brain and therefore mood.



### What is the "gut-brain connection"?

It's very complex, and we're still learning lots about it. There seem to be multiple things working together such as:

- The vagus nerve that links the gut directly to the brain
- The "enteric nervous system" (A.K.A. "second brain") that helps the complex intricacies of digestion flow with little to no involvement from the actual brain
- The massive amount of neurotransmitters produced by the gut
- The huge part of the immune system that is in the gut, but can travel throughout the body and
- The interactions and messages sent by the gut microbes.



## **The vagus nerve**

There is a nerve that runs directly from the gut to the brain. And after reading this so far, you'll probably get a sense of which direction 90% of the transmission is not from your brain to your gut (which is what we used to think), but from your gut up to your brain.

## **The enteric nervous system and neurotransmitters**

The gut has more nerves than your spinal cord and that's why it's referred to as the "second brain."

Controlling the complex process of digestion (i.e. digestive enzymes, absorption of nutrients, the flow of food, etc.) should probably be done effectively.

Guess how these nerves speak to each other, and to other cells? By chemical messengers called "neurotransmitters."

In fact, many of the neurotransmitters that have a strong effect on our mood are made in the gut! E.g. a whopping 95% of serotonin is made in your gut, not in your brain.

## **The immune system of the gut**

Because eating and drinking is a huge portal where disease-causing bugs can get into your body, it makes total sense that much of our defense system would be located there too. Seventy-five percent of our immune system is in our gut.

The immune cells can move throughout the entire body and cause inflammation just about anywhere, and if they're "activated" by something in the gut, they can potentially wreak havoc anywhere in the body. Including the potential to cause inflammation in the brain.

## **Gut microbes**

You have billions of these good microbes happily living in your gut. They do amazing things like help you digest certain foods, make certain vitamins, and even help regulate inflammation.



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Evidence is now showing that changes in your gut microbes can impact your mood, and even other, more serious, mental health issues.

### How do these all work together for brain health?

The honest answer to how these things all work together is that we really don't know just yet. More and more studies are being done to learn more.

But one thing is becoming clear. A healthy gut goes hand-in-hand with a healthy brain



### How do you feed your brain and your mood?

Of course, a variety of minimally processed, nutrient-dense foods are required, because no nutrient works alone.

However two things that you may consider eating more of are **fiber** and **omega-3 fats**. Fiber in fruits, veggies, nuts and seeds help to feed your gut microbes. And omega-3 fats in fatty fish, walnuts, algae, and seeds like flax and chia are well-know inflammation-lowering brain boosters.



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## Recipe

### Blueberry Overnight Oats (serves 2)

#### Ingredients:



1 cup blueberries (fresh or frozen)  
1 cup oats (or choose gluten-free alternative)  
1 cup almond milk  
2 tablespoons chia seeds  
½ teaspoon cinnamon  
1 banana, sliced  
¼ cup chopped walnuts

#### Directions:

1. Mix blueberries, oats, almond milk, and chia seeds in a bowl with a lid.
2. Let set in fridge overnight.
3. Split into two bowls and top with cinnamon, banana, and walnuts.

Serve and enjoy.

Your gut microbes love to eat the fiber in the blueberries, oats, seeds, and nuts. Meanwhile, your brain loves the omega-3 fats in the seeds and nuts.

#### References:

- <http://www.health.harvard.edu/blog/nutritional-psychiatry-your-brain-on-food-201511168626>
- [http://www.hopkinsmedicine.org/health/healthy\\_aging/healthy\\_body/the-brain-gut-connection](http://www.hopkinsmedicine.org/health/healthy_aging/healthy_body/the-brain-gut-connection)
- <http://www.precisionnutrition.com/all-about-probiotics>
- <http://www.precisionnutrition.com/fix-gut-fix-health>
- <http://neurotrition.ca/blog/your-gut-bugs-what-they-eat-and-7-ways-feed-them>