

## **PRINT-Deep breaths might help before a holiday meal**

An OSF HealthCare gastroenterologist says [recent research](#) strongly supports the case that the brain and the digestive system are closely connected through one key communication pathway: the vagus nerve.

The vagus nerve, the longest in the nervous system, acts as a biological “superhighway,” carrying messages between the brain, stomach, intestines and other vital organs. Researchers say this pathway is crucial for regulating digestion, inflammation and even mood.

Omar Khokhar, MD, a gastroenterologist at OSF HealthCare, says at first, researchers thought the brain impacted gut health. But now, they know a person’s gut bacteria – known as the gut microbiome – can influence mental health as well. So, it’s a two-way connection, and when the vagus nerve is functioning well, it helps keep digestion steady, reduces inflammation and supports a stable stress response.

How do you know when the gut microbiome becomes imbalanced? Dr. Khokhar says it can show with bloating, pain or irregular bowel habits.

“The best way to sort of self-assess if you have a good, healthy gut microbiome is how many bowel movements you’re having. Are they robust, big bowel movements? This is what we’re looking for,” Dr. Khokhar explains. (He holds up an example of at least a six- inch long plush toy as an example) “That’s what we want from everybody. Also, the gas you pass. Everyone knows the difference between the gas that actually feels good – like decompressive – versus the gas that is not satisfying.”

### **Reduce stress before eating**

Chronic stress, poor sleep or traumatic experiences can reduce vagal tone – the nerve’s ability to send calming signals – which might worsen gut conditions like irritable bowel syndrome. Dr. Khokhar says the vagus nerve can be distracted to respond to the brain too often in states of chronic stress or anxiety, ignoring the role it needs to play in digestion.

“There’s no question there’s a correlation between mental health and optimal efficiency or efficacy of your GI tract. Whether that’s motility, hormone secretion or digestion, it all ties in together,” he stresses. “That’s why it’s really important to address that.”

Holidays can be exciting but also a stressful time. So, Dr. Khokhar believes some deep breathing, especially before and after a big holiday meal, can help to reset the vagus nerve and improve how it works.

“Kind of like you restart your phone or computer. It’s a very similar concept. Let’s clean it out. Let’s do some deep breathing for five or 10 minutes. It’s all it takes. Then the vagus nerve says, ‘OK, I’m more relaxed here. I can then do my job, which is to secrete hormones, to squeeze and to help with the GI tract.’”

Early evidence suggests deep breathing, meditation, regular exercise and even humming or singing might stimulate the nerve and help restore balance. What kind of breathing exercises does he recommend? Dr. Khokhar says the diaphragm should be engaged by using a 4-4-4 technique.

"Four seconds in, four seconds hold and four seconds out. Navy SEALs have mastered this when it comes to sleep and other regulation. I think they have a 4-6-7 where you inhale four seconds, hold for six seconds and then exhale for seven seconds. Personally, I have a hard time exhaling because you have to time your exhale. You can't just blow out that." (needs to occur slowly).

Scientists caution that much of the research is still emerging, but they agree the vagus nerve is a promising target for future treatments. For now, Dr. Khokhar says deep breathing, staying hydrated and getting into the habit of walking or moving after a meal are all good approaches to help improve digestion.