Get Your Gut Going!

How Belly, Breath and Brain are Wired to Work Together

In our complicated, chaotic world, people are spending more time seeking external solutions to manage life stresses, while their critical internal body functions suffer. The basic survival functions of breath, heartbeat and belly (gut) are compromised by cognitive and emotional stresses. Improving digestive function comes from meeting the needs of this important body ↔ brain connection with simple self-care techniques. Let’s look at how belly, breath and brain are wired to work together, so we can find ease in our embodiment and smoother navigation in the world.

I. The Original Perspective

From the first weeks of conception, the embryo focuses on growing a brain that will run a body, as the body grows to serve the brain. The brain’s first obligation is to the body. Once we are born, having reliable “survival circuits” for breath, heartbeat and belly (gut function) allows us to begin the journey of self and story as we navigate the external world.

Over time, the mind’s focus on external stresses and stories can override the original body ↔ brain conversations that keep us functioning smoothly inside. Stressful stories and distractions can actually inhibit proper autonomic function of belly, breath and brain.

The effects of this may sound familiar: poor sleep, memory, learning; digestive issues, allergies, food intolerances; lethargy, anxiety, depression. We are told to approach these challenges with even more stories, but these issues don’t resolve from the “top down.” Our struggling survival systems need some support from the “body UP.”

It’s time we get back to the original perspective. If your belly, breath and brain are happy, everything else will run smoothly too. And then you can create your own embodied story of being in the world.

II. The Internal Landscape

Your entire gut tube, from mouth to rectum, evolved from one of the original two embryological layers, the endoderm (“yolk ball,” Fig. 1, B).

Look at the “yin-yang” shapes. The blue brain tube (A, ectoderm) is already surging forward to build your brain, while the yellow yolk ball (B) is tugging downward to build your gut tube.

The coherence and vitality of these two layers is driven by this rhythmic glide and grind.
In fact, the glide and grind between the first two layers creates the third layer in between.

This third layer is your “mesoderm” (C) and it will sprout many important organ systems: first, your vascular system (heart, arteries and veins), then vascular organs such as kidneys, spleen and gonads, and your musculoskeletal components.

As we can see in Figure 2, there is a tiny collar (D) of tissue where blue brain tube stays in direct contact with yellow gut tube; that is your future mouth. Your mouth structures act as a north node, holding midline for proper alignment of brain and belly.

By five weeks gestation, that simple blob of yolk ball has differentiated into a more distinctly segmented tube that will create your mouth, throat, thyroid gland, trachea, lungs, esophagus, stomach, liver, pancreas, intestines and bladder.

The vitality and organization of this specializing tube is still driven by the rhythmic pulsing and tugging between brain tube and gut tube, until more complex wiring signaling develops.

The brain tube (now finding its form as “brain and spinal cord”) sprouts nerves to wire up the gut, and the growth of the gut helps organize the circuits in the brain so that digestion, heartbeat and respiration will occur autonomically – internally self-regulating without our conscious attention.

This is organized in a very efficient way, with all three functions working off of one special circuit, via the Vagus Nerve, in the Autonomic Nervous System.
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We now have “parasympathetic” wiring to monitor internal functions, and “sympathetic” or stress wiring to detect danger in the environment. Nerves send body and environmental input to the brain, and interpretation circuits create an output signal to the body. This pattern of “input, interpretation, output” is how body and brain communicate.

Let’s take a quick look at what that means.

In our adult form, we continue to map ourselves by the original “blue brain tube and yellow gut tube” blueprint.

In this picture, we can see these “yellow gut tube” mouth structures:

F. Uvula (soft palate flap)
G. Pharynx (back of nose and throat)
H. Tongue

And here are the “blue brain tube” structures:

A. Medulla (brainstem circuits for breath, heartbeat and digestion)
B. Pons (sensory processing circuits)
C. Cerebellum (sensory and movement processing)
D. Hypothalamus (organ and thermostat function)
E. Eyeballs! (did you know that your eyeballs sprout forward from your brainstem?)

So, autonomic nerves from all of the belly organs, lungs and heart travel up to the Medulla (A) for interpretation and directions. Sometimes the directions (or output) are reflexive, meaning, patterns of input just automatically generate certain outputs. For example, exhaling reflexively slows your heart rate, while inhaling increases it. This is what makes sense to body and brain for our most efficient function.

But sometimes the input signals are more complex, so the Medulla sends them upstream to the Pons (B) for more complex output. An example of this is coordinating breathing with movement activities.

And sometimes the signals get routed even further upstream, all the way to learning, memory and cognition areas. These higher pathways are what get us in trouble, because if we have stories about the feel of this experience, those descending story circuits can shut down the most appropriate output to the body.

Say you are walking into a meeting with your boss, which could be a stressful encounter. Your sympathetic, “fight or flight” stress drive amps up, which automatically escalates breath and heartbeat while turning OFF your digestion. Unfortunately, you just ate lunch, and now you’ve thrown the switch on the digestive process. So, on full defense mode, your lunch sits there like a toxic lump in your belly.
And as you walk out of your meeting with a new overload of work to do, stress drive stays ON and digestive functions stay OFF. No matter how many frantic signals your gut tube sends up to the brain, those brainstem stress circuits shut them down without the healthy, helpful output the gut desperately needs.

All the yogurt and probiotics in the world won’t help your gut in this situation. If the brainstem orders are “shut down,” well, the gut is shut down.

Rebooting belly, breath and brain happens from the bottom up, the BODY up, not the mind down.

Those incoming signals, from belly breath, from gut gurgle, from slower breathing, all help to turn off the stress circuits in the brain, quiet the worry stories cascading from above, and land us safely in terra forma, our earthly form.

And you are the only one who knows what that means for you.

I can tell you a story about it, but you’re the only one who can feel it and understand what it means in your body.

Here’s a general guiding story:

Sit back with your back, arms and legs comfortably supported, hands in your lap if you’d like. Shutting your eyes usually helps. Now, let a big noisy EXHALE out of your mouth. Go ahead and growl with it! Can’t breathe IN until you let some of that OUT.

Now, with your inhale, let your belly button push out. Never mind your ribcage and tense shoulders trying to gasp some breath for you. Go deeper. Inhale and your belly expands, exhale and the belly softens.

That’s it. No worries about nose or mouth breathing right now, no fancy counting of inhales and exhales and holding in between. Find the body rhythm that works for you. This belly expanding idea may feel weird at first, like you’re not getting enough air into your lungs. Go ahead and gasp and “catch up” a bit, then come back to your belly. Learn what this is for you. You were born breathing this way. Your body and brain are wired to breathe you this way.

Inhale and your belly expands, exhale and it softens. Good belly breathing moves your ribcage from the bottom up, and that’s where more wiring sensors send signals to the brain about your respiratory needs. That’s when the spontaneous big “sigh” happens, and you know that breath and brain are online again.

Inhale and your belly expands, exhale and it softens. With each breath, your gut tube starts talking to the brain, and your brain responds with the gut gurgle output. When you hear those gurgles, you know your brain is talking back. Phew.
Inhale and your belly expands, exhale and it softens. And now, as your gurgly belly softens, imagine that your eyeballs can soften, too. Imagine they can unclench, or get squishy like jelly, or roll back in your sockets a bit. When you get the hang of this, juicy eyeballs, your jaw will soften and unclench. Now you have quelled the stress circuits.

Now you are the master of your body < > brain domain.

Want to close your eyes and hear me talk you through this? Use this link to download the “Seven-minute Miracle” track of me guiding the process.  http://bit.ly/1bkPhmN

And now you’re getting a feel for your internal landscape.

**III. From the Maps to the Territory**

Once you know your belly breath, you can use your own touch to facilitate and reorganize your gut function; specifically, through “rebooting” your large intestine. Let’s start with some simple anatomy maps, so you’ll know your landmarks.

We’re used to thinking of our bodies like the skeleton to the right. >>>

Our bony landmarks for this “Gut Gurgle” exercise are this bottom edge of the ribcage (A) and the hip crest bone (B) that you feel inside your front pants pocket.

<<< Between the edge of your ribcage and the hip crest bone are your abdominal organs. There, lurking behind your core abdominal muscles, is your original gut tube.
Let’s look a little deeper. Under the abdominal wall is protective membrane, and then the organ systems.

Food passes from the stomach (D) to the small intestine (E) and then to the large intestine (F). This corner (F) is where the ileocecal valve passes material from the small to the large intestine; your appendix sprouts from that intersection.

The trail of the large intestines interests us, because there are several key areas where congestion can occur, impairing both the elimination process and gut <> brain signaling.

The path of fecal material starts at the ileocecal valve (F), moves up through the ascending colon (G), turns a tight corner by the liver (H), ambles across the abdomen (I), turns another tight corner by the spleen (J), descends (K), and then twists around into the sigmoid (L) and rectum.
It is at the corners (F, H, J, K) that congestion is prone to occur. Now that you are belly breathing, and gurgling, and have a better parasympathetic signal between gut and brain, we can help unplug these corners and improve gut function, through simple touch.

Here’s what we do. We are going to use a gentle pressure “input” to stimulate the nervous system to make its appropriate peristaltic “output” to move things along through the large intestine.

We always start at the left hip crest (K), travel up to the edge of the left ribcage (J), across to the right ribcage (H) and then down to the right hip crest (F).

Why this direction? Well, you always want to “clear the drain” before you open the faucet. Even if you only have time to work the left side (K, J), start at the left hip crest and then work the left rib edge.

So here is the “Gut Gurgle” protocol:

1. Lie on your back in a comfortable position. Spend a few moments belly breathing, feeling for the “sigh sign,” the gurgle and your jello eyeballs.
2. Start with a gentle, rubbing, “sinking in” touch inside your left hip crest (K).
3. Move up to the edge of your left ribcage (J) and gently wiggle under the rib edge.
4. Move across to the right ribcage edge (H) and do the same gentle schmoozing.
5. Move down to the inside of your right hip crest (F) and finish with the same supportive rubbing touch.
6. Leave both hands inside your hip crest edges, resting on your belly. Meet your hands with your breath and spend a few moments letting those connections wake up.

You can do this in sitting as well; when you do the rib holds, tuck your fingers under and then pivot your ribcage/upper body side to side.

From this simple exercise you are rebooting your peaceful, internal nervous system for optimal breath, heartbeat and belly function. This reassuring landing now lets you be present in the world with more ease and flow.

And, this landing is always available to you. Every time you take the deep belly breath, you are inviting your peaceful (parasympathetic) nervous system to synchronize this internal dance. You take the breath, it knows what to do.

Welcome home!
IV. General Guidelines

* Always take a few minutes to settle in with your breathing before using the “gut gurgle” techniques. Use the “7-minute Miracle” meditation track or something similar.

* You can do the breathing and then the bodywork in different positions: lying down on your back, semi-reclined on a couch or easy chair, sitting back in your desk chair.

* Practice at a relatively quiet time, when you have the best chance of being safely relaxed and ready for belly and brain to get connected.

* Do not do this immediately after eating, as your brain and gut are already focused on the upper digestion process. Wait at least 30 minutes.

* Notice how your body manages these connections. At first, the gurgle might be just under your fingertips. Later, you might notice that as your gut relaxes, you involuntarily “sigh.” This “sigh sign” tells you that the breath-heartbeat-belly wiring is getting more coordinated up in your brainstem. As this gets familiar, you might also notice that as you really land in your belly, you start producing more saliva. This is an excellent sign of brainstem circuit organization!

V. FAQs

* Would this be helpful for my colicky baby?

Sometimes “colic” is showing you that gut and brain are not “online” quite yet. A simple tummy rub like the 4-point “gut gurgle” protocol can facilitate a better gut-brain connection for baby. Just make sure that YOU are belly breathing first and baby is peaceful, not in the throes of discomfort.

* My toddler complains of tummy aches and sometimes has difficulty pooping. Can this help?

Children in the 0-3 population learn the belly breathing by resonating to you, and this is the first step towards good gut-brain coordination. At about age 3, children can be taught the belly breath and even some simple “rub your tummy here” directions. Bedtime is a great time to incorporate the belly-breath rituals, as landing with those circuits helps sleep settle in as well. Children love feeling empowered with these self-regulating techniques!

* Are there any contraindications to doing this protocol?

There are no contraindications to learning belly breathing. If you are going to do this protocol to someone else, make sure both of you are in peaceful breathing.

Also, use caution and common sense post-surgery or after childbirth, and if your “patient” has an active infection and has been on antibiotics less than 48 hours, please wait.

Feel free to email me at: drcathyholway@gmail.com for more information.