

**BLADDER PAIN SOCIETY** 

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# GIBS News Letter

## Stimulating Vagus Nerve Through Conservation Approach to Help with Bladder Pain Syndrome, Associated Anxiety and Digestive Symptoms.

agus nerve has gained quite the traction from articles in the scientific journals to health magazines, blogs and social media. Although there is limited research, many patients and practitioner swear by its positive effects, so much so that many claim to have their lives changed by vagus nerve stimulation therapies. Vagus nervehas been known as the wandering nerve due to its root at the brainstem and innervating many organs along its path such as pharynx, larynx, heart, lungs and digestive tract from esophagus to recto-colon. Vagus nerve makes up for the most of the parasympathetic nervous system. Vagal nerve stimulation has shown anti-nociceptive effect(3), antiinflammatory properties through afferent and efferent pathways(1) which can be applied to the IC/BPS patient population.

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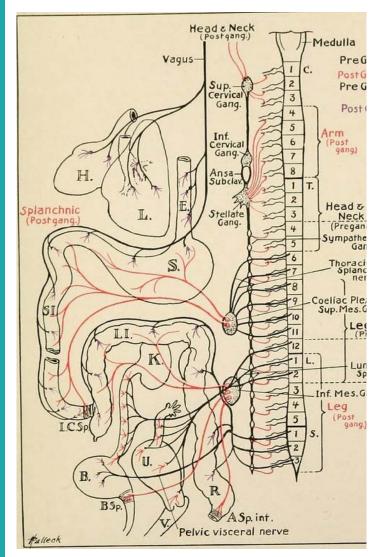
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The above image appreciate the most widely distributed and longest cranial nerve

#### **The Polyvagal Theory**

"The important thing in science is not so much to obtain new facts as to discover new ways of thinking about them." William Lawrence Bragg.

The quote applied well to the polyvagal theory. Traditionally, vagus(dorsal) nerve was thought to have only the rest and digest function. Dr. Stephen Porges, introduced the PolyagalTherory in 1994 and looks at autonomic nervous system as 3 different neural circuit, working together to achieve homeostasis, and functional appropriately to meet the environmental and social demands. The ventral branch of the vagus nerve(positive states of relaxation an dsocial engagement), spinal sympathetic chain (fight or flight), the dorsal branch of vagus nerve( slowdown, shutdown and depressive behavior). Polyvagal theory can be the explanation of the mind body connection or the brain-gut connection. Many times we neglect the social, emotional, psychological aspect of the disease when it might be the key to puzzle of chronic pain and anxiety and improving vagal tone can be one of the many tools to help those aspects of the disease. (2)

#### Vagus Nerve And Pelvic Floor

In a study done by Cahalan et al, 15 patients with mean chronic pelvic pain of 12.3 years underwent RAVANS (respiratory-gated auricular vagal afferent nerve stimulation) compared with NVAS (nonvagal auricular stimulation) as control over 2 sessions, spaced one week apart. RAVANS demonstrated a trend for reduced evoked pain intensity and temporal summation of mechanical pain and significant reduced anxiety compared to NVAS.(3)

With history of chronic pain, many people hold their tension in their pelvic and abdominal muscles which further aggravate their pain. Doing pelvic floor relaxation through either breathing or manual therapy has been shown to improve the vagal tone through regulating the posterior vagus nerve. A lot of pelvic functions are performed when we feel safe ( in bedroom , in bathroom ,etc) We have all heard the classic example that when there is fire, we won't think about pooping. But our patients might be living in this sympathetic overdrive state for years!

With IC/BPS, the chronic nature of the disease can have a toll on physical, emotional and social functioning.

Patients can go in to sympathetic overdrive leading to further pain, anxiety, gastrointestinal and other systemic symptoms.

Below are some of the ways to stimulate vagus nerve that can be suggested to the patient that an be incorporated I their daily life.(1,2)

- 1. Alternate Nostril Breathing
- 2. Singing
- 3. Socializing with people you trust and enjoy
- 4. Movement
- 5. Meditation
- 6. Prayer/Chanting
- 7. Yoga/Tai chi
- 8. Chewing you food properly and many others

#### **Exercises To Stimulate Vagus Nerve:**

These exercises are based on the book by Dr. Stanley Rosenberg(2). I use it patients who are anxious before start of the session and notice a difference. Although, there is no quantifiable data about the efficacy of these exercises, it has shown mixed results clinically for me and my colleagues.

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<u>Basic Exercise</u>: This exercise claims to reposition the atlas(C1) on axis (C2) and improved neck mobility and entire spine and improves blood flow to the brain stem, which can in turn have a positive effect on ventral branch of vagus nerve.



It is better to start in lying down and then once you are proficient you can do it in sitting.

### STEP 1

Weave the fingers of one hand with the fingers of the other hand.

## STEP 2

Put them behind your head putting the weight on your head on your interwoven fingers.

## STEP 3

Keeping head in place, look to the right, only with your eyes as far as you can. Hold for 30-60sec and you might feel swallow, sigh or yawn.

## STEP 4

Now repeat on left. You might be dizzy after doing this exercise, so take 1-2 min before you stand up and move.

## Here's to the vagus nerve and hoping that it provides us with one more tool/perspective to help the complex IC/BPS patients holistically!

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## Author

## Dr. Bhavti Soni

Pelvic Health Specialist TMJ & Headache Specialist Owner Warren Physical Therapy & Wellness **Email:** hello@warrenpt.com | **Www**.warrenpt.com



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