Introduction

The Veda’s debatably written 3-5 thousand years ago discussed consciousness in all aspects and via yoga (teachings) the knowledge was spread. Yoga means to “yolk” or to make one. Physical poses (asanas) did not enter the teachings until The Yoga Sutras of Patanjali around 350-450AD and are one small piece of a greater teaching on how to live consciously and in alignment. The studies below mostly worked with Asana’s to improve IBS and across the board showed relief in symptoms. It is my belief that positive outcomes would increase considerably if more time were spent on educating participants on the background of yoga and diversifying the programs to include education on pranayama, consciousness and meditation. There was a time when prevention was a way of life and healing was a given, not a long sought goal. We have the means, through yoga to return to this way of life.

This paper will look at the effects of yoga on irritable bowel syndrome (IBS). IBS is a chronic dysfunction of the gastrointestinal system expressed as abdominal pain and altered bowel habits predominately diarrhea (IBS-D), constipation (IBS-C) or mixed (IBS-M). Symptoms must occur 3 days per month for the previous 12 weeks to be diagnosed. A newer
diagnosis called SIBO is a form of IBS with the addition of dysbiotic flora (inappropriate gut bugs).

The origin of IBS has been debated, theories include dysbiosis, psychosocial factors (stress), autonomic nervous system dysfunction (ANS), food allergies, over use of antibiotics and visceral hypersensitivity. The Enteric nervous system (ENS), part of the ANS, also known as the “second brain”, is responsible for many aspects of the Gastrointestinal system including peristalsis and can work independently of the CNS. It is understandable why inflammation in the GI tract can have so many affects on our overall health. Bidirectional communication between the gut and brain has long been established through pathways including the autonomic nervous system (ANS), the enteric nervous system (ENS), the neuroendocrine system, and the immune system. The Gut-Brain Axis (GBA) supports why those suffering with IBS also report depression, anxiety disorders, chronic fatigue and various other psychological health issues.

IBS effects a large population, over 20% of Americans (highest percentage in the world) and 15-20% of Canadians/Europeans are affected. Women are 1.5 to 3 fold more likely to have IBS than men. Co-existing conditions found in over half of IBS patients include: chronic fatigue, chronic back pain, chronic pelvic pain, chronic headaches and TMJ. IBS is a significant healthcare burden and severely affects a persons quality of life. Yoga in its many forms, addresses each and every one of the above listed symptoms and co-existing conditions.

This paper will look at current research focusing on asanas and offer insights on meditation and a mudra known to be effective in IBS.

**ASANAS (Body postures)**

The bulk of the research on IBS worked with various asanas from the Hatha yoga tradition. The programs begin with easier poses progressing into more difficult. The challenges faced were compliance, choosing poses that did not need props and affordable classes for those with lower income who wished to continue the practice. It was consistently shown the more yoga practiced the better the outcomes. It was also shown that adding meditation (dyana) and breathing exercises (pranayama) improve outcomes over asanas alone.
Yoga for teens with IBS had a conventional group (n = 12, 1 dropout) given symptomatic treatment with loperamide 2-6 mg/day for 2 months, and the yogic intervention group (n = 9) consisted of a set of 12 asanas (Vajrasana, Shashankasana, Ushtrasana, Marjariasana, Padhastasana, Dhanurasana, Trikonasana in two variations, Pawanmuktasana, and Paschimottanasana) along with Surya Nadi pranayama (right-nostril breathing) two times a day for 2 months. Take home, 50% of teens experienced relief in their IBS symptoms, most of the non responders experienced relief during class and not at home and reported their parents were not supportive of yoga. Homework helped and was important. Practicing longer than 6 weeks improved outcomes even more.

The poses were chosen most likely for the following reasons:

- **Vajrasana (Thunderbolt):** A comfortable seated pose and a good place to teach breathing exercises that improve digestion and calm the nervous system.
- **Shashankasana/Sasangasana (Rabbit Pose):** is a near inversion pose that relaxes the nervous system therefore mind and upper body, while toning the pelvic area.
- **Ushtrasana/Ustrasana (Camel pose):** a traction backbend pose, opening the front of the body (abdomen and intestines). Easy to teach to beginners, increases compassion and harmony.
- **Marjariasana/Marjaryasana (Cat pose):** loosens up the spine increasing flexibility with an indirect effect on the organs of lower abdomen. Movement and massage of the intestines leading to improved digestion.
- **Padhastasana (Hand under foot pose):** Forward fold that stimulates the functioning of the Pineal and adrenal glands. Overactive adrenals can decrease digestion and peristalsis and increase anxiety.
- **Dhanurasana (Bow pose) Backbend pose opening the abdomen and massaging the intestines.** Can be difficult for beginners without props or adjustments.
- **Pawanmuktasana (Easy gas release pose).** I am not sure why they consider this a variation of Trikonasana however it is a pose that compresses the digestive track and allows for easy movement of gas. An easy pose for anyone to learn and practice often times done at the beginning of an asana practice.
- **Paschimottanasana (Forward bend):** In Sanskrit meant West (back) side of body stretch posture. Opens the hips, helps the mind to look within.
Stretches the muscles on the back side of the body, contracting the anterior muscles. The pressure this creates in the abdomen increases secretions of the intra abdominal glands. Soothing to the mind decreasing anxiety, anger and irritability.

- Surya Nadi pranayama (right-nostril breathing): Also known as Pingala Nadi. Increases pranic energy, physical energy helping revitalize the body specifically by increasing the efficiency of digestion and balancing the nervous system. Helps to decrease anxiety, depression and the affect of stress, all associated with IBS.

This particular study did not include twists. Twists are know to massage and tone the visceral organs (abdominal organs), detoxify glands/organs and aid in digestion. A simple twists like the Sukasana twist or Jathara Parivartanasana (reclining spinal twist) could be added to a future study.

Although most yoga teachers will incorporate breathing techniques and meditation in movement, it is difficult to know how much other than the asanas were taught in these studies. Below are two suggestions that could improve outcomes in future studies.

**MEDITATION**

Meditation is well know for its healing affect on the body mind and spirit. There is a growing body of research on its ability to help decrease stress, high blood pressure, insomnia, anxiety, IBS, cognitive function and fatigue. And this is only a few of the many areas meditation improves our quality of life.

Savasana/Shavasana (corpse pose) could easily be incorporated at the end of each class in research studies. Savasana allows for meditation in the physical and to embody the effects of the class at a deeper level. The deep relaxation often felt at the end of Savasana is a touchstone that people can use to recall when they feel stressed or anxious.

**MUDRA/PRAYNAMA**

Although I have not found research on Mudras, they have a long history of being utilized to represent subtle qualities you wish to expand in your consciousness. A mudra is a gesture of the hand, face or body. Apanayana Mudra is the gesture of balanced elimination and is used for the symptoms of IBS. When using this mudra the focus is on a longer exhalation and pause before inhalation leading to a downward flow of energy focused in the
pelvis and lower abdomen. Effectively massaging the internal organs of elimination, opening and balancing the first two chakras and cultivating tranquility of mind. Its ability to balance the GBA axis may explain its effectiveness in people suffering from IBS.

RESOURCES - Research
**Yoga as a Therapy for Irritable Bowel Syndrome.**
D’Silva A1, MacQueen G2,3, Nasser Y4, Taylor LM1, Vallance JK5, Raman M6,7,8.

**Comparison of Laughter Yoga and Anti-Anxiety Medication on Anxiety and Gastrointestinal Symptoms of Patients with Irritable Bowel Syndrome.**
Tavakoli T1, Davoodi N1, Jafar Tabatabaee TS2, Rostami Z3, Mollaei H4, Salmani F5, Ayati S1, Tabrizi S1.

**Yoga for Teens With Irritable Bowel Syndrome:** Results From a Mixed-Methods Pilot Study.
Evans S1, Seidman LC, Lung K, Sternlieb B, Zeltzer LK.

**Effect of Yoga in the Therapy of Irritable Bowel Syndrome: A Systematic Review.**
Schumann D1, Anheyer D2, Lauche R3, Dobos G2, Langhorst J2, Cramer H3

❖ Clinical Epidemiology. **The Epidemiology of Irritable Bowel Syndrome.** 2014.

**Mindfulness-based stress reduction for the treatment of irritable bowel syndrome symptoms: a randomized wait-list controlled trial.**
Zernicke KA1, Campbell TS, Blustein PK, Fung TS, Johnson JA, Bacon SL, Carlson LE.

**Randomised clinical trial: yoga vs a low-FODMAP diet in patients with irritable bowel syndrome.**
Schumann D1, Langhorst J1, Dobos G1, Cramer H1.

**Yogic versus conventional treatment in diarrhea-predominant irritable bowel syndrome: a randomized control study.**
Department of Physiology, All India Institute of Medical Sciences, New Delhi 110029, India.

**The effects of relaxation response meditation on the symptoms of irritable bowel syndrome: results of a controlled treatment study.**
Keefer L1, Blanchard EB.
A one year follow-up of relaxation response meditation as a treatment for irritable bowel syndrome.
Keefer L, Blanchard EB.

RESOURCES - Books
- Science of Yoga by Ann Swanson
- Teaching Yoga by Mark Stephens
- Hatha Yoga Illustrated by Martin Kirk