



Irene Sonu

Clinical Associate Professor, Medicine - Gastroenterology & Hepatology

CLINICAL OFFICE (PRIMARY)

- **Stanford Gastroenterology and Digestive Health Clinic**

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Redwood City, CA 94063

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Bio

BIO

I am passionate about gut health and strive to provide the best care to my patients. I specialize in complex motility disorders of the gastrointestinal tract. My areas of clinical expertise include achalasia, dysphagia, eosinophilic esophagitis, gastroesophageal reflux disease, gastroparesis, functional dyspepsia, irritable bowel syndrome, and pelvic floor dysfunction. I also see patients in need of fecal microbiota transplant for recurrent *C. difficile* infection.

CLINICAL FOCUS

- Gastroenterology
- Neurogastroenterology
- Dysphagia
- Eosinophilic Esophagitis
- Achalasia
- Irritable Bowel Syndrome
- Constipation
- Diarrhea
- Celiac Disease
- Pelvic Floor Dysfunction
- Gastroparesis
- Scleroderma Bowel Disease

ACADEMIC APPOINTMENTS

- Clinical Associate Professor, Medicine - Gastroenterology & Hepatology

ADMINISTRATIVE APPOINTMENTS

- Clinical Assistant Professor, Stanford Healthcare, (2016- present)

HONORS AND AWARDS

- Johnson & Johnson Global Health Scholars Program, Stanford University (2012)
- PHI BETA KAPPA, Massachusetts Institute of Technology (2004)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, American Gastroenterology Association (2016 - present)
- Member, American College of Gastroenterology (2014 - present)
- Member, American Society for Gastroenterology Endoscopy (2013 - present)

PROFESSIONAL EDUCATION

- Residency: Stanford University Internal Medicine Residency (2013) CA
- Internship: Stanford University Internal Medicine Residency (2011) CA
- Medical Education: Perelman School of Medicine University of Pennsylvania (2010) PA
- Board Certification: Gastroenterology, American Board of Internal Medicine (2016)
- Fellowship: Stanford Hospital and Clinics (2016) CA
- Board Certification: Internal Medicine, American Board of Internal Medicine (2013)
- Board Certifications, American Board of Internal Medicine , Gastroenterology (2016)
- Fellowship, Stanford Health Care , Gastroenterology and Hepatology (2016)
- Residency, Stanford Health Care (2013)
- BS, Massachusetts Institute of Technology , Biology (2004)

COMMUNITY AND INTERNATIONAL WORK

- University City Health Coalition Free Medical Clinic, Philadelphia, PA
- Arbor Free Clinic, East Menlo Park, CA
- Pacific Free Pain Clinic, San Jose, CA

Teaching

COURSES

2025-26

- Science of Medicine II-A: INDE 222A (Aut)

2024-25

- Science of Medicine II-A: INDE 222A (Aut)

2023-24

- Science of Medicine II-A: INDE 222A (Aut)

2022-23

- Science of Medicine II-A: INDE 222A (Aut)

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Gastroenterology & Hepatology (Fellowship Program)

Publications

PUBLICATIONS

- **Deployment of a cloud-based passive defecation monitoring system for continuous gut health monitoring.** *Nature protocols*
Song, Z., Kim, M., Lee, J., Kwon, T. H., Kim, J., Kim, J. H., Kim, S. G., Kim, S., Jun, B. H., Lee, S. H., Park, W. G., Sonu, I., Rosen, et al
2026
- **AI-Driven Defecation Analysis by Smart Healthcare Toilet: Exploring Biometric Patterns and Eu-Tenesmus.** *Advanced science (Weinheim, Baden-Wurttemberg, Germany)*
Song, Z., Kwon, T., Lee, J., Won, D. D., Lee, B. J., Choi, H. S., Liao, J. C., Park, W. G., Sonu, I., Rogalla, S., Rosen, M. J., Hu, D. L., Ziyang, et al
2025: e2503247
- **Fecal microbiota transplantation: present and future.** *Clinical endoscopy*
Cha, R. R., Sonu, I.
2025; 58 (3): 352-359
- **Fecal microbiota transplantation: present and future** *CLINICAL ENDOSCOPY*
Cha, R., Sonu, I.
2025
- **Intestinal Methanogen Overgrowth (IMO) Is Associated with Delayed Small Bowel and Colonic Transit Time (TT) on the Wireless Motility Capsule (WMC).** *Digestive diseases and sciences*
Talamantes, S., Steiner, F., Spencer, S., Neshatian, L., Sonu, I.
2024
- **Capsules for the Diagnosis and Treatment of Gastrointestinal Motility Disorders- A Game Changer.** *Current gastroenterology reports*
Sonu, I., Oh, S. J., Rao, S. S.
2024
- **Use of a footstool improves rectal balloon expulsion in some patients with defecatory disorders.** *Neurogastroenterology and motility*
Ulsh, L., Halawi, H., Triadafilopoulos, G., Gurland, B., Nguyen, L., Garcia, P., Sonu, I., Fernandez-Becker, N., Becker, L., Sheth, V., Neshatian, L.
2024: e14781
- **Cromolyn Reduces Symptoms in Patients With Irritable Bowel Syndrome, Functional Dyspepsia, or Gastroparesis**
Karhu, E., Linda Anh Nguyen, Sonu, I., Neshatian, L., Gottfried-Blackmore, A., Fernandez-Becker, N., Spencer, S.
LIPPINCOTT WILLIAMS & WILKINS.2023: S492
- **Prevalence and Predictive Factors of Small Intestinal Bacterial Overgrowth in Patients With Chronic Fatigue Syndrome**
Karhu, E., Neshatian, L., Fass, O., Sonu, I., Nguyen, L.
LIPPINCOTT WILLIAMS & WILKINS.2023: S1351-S1352
- **Development and Validation of a Machine Learning System to Identify Reflux Events in Esophageal 24-hour pH/Impedance Studies.** *Clinical and translational gastroenterology*
Zhou, M. J., Zikos, T., Goel, K., Goel, K., Gu, A., Re, C., Rodriguez, D., Clarke, J. O., Garcia, P., Fernandez-Becker, N., Sonu, I., Kamal, A., Sinha, et al
2023
- **The integrated relaxation pressure may not be an appropriate gold standard for deglutitive relaxation due to reliance on a single intragastric reference sensor.** *Neurogastroenterology and motility : the official journal of the European Gastrointestinal Motility Society*
Fass, O. Z., Regalia, K. A., Sweatt, A. J., Nandwani, M. C., Zikos, T. A., Fernandez-Becker, N. Q., Nguyen, L. A., Sonu, I. S., Triadafilopoulos, G., Clarke, J. O.
2023: e14635
- **Delivery of Fecal Material to Terminal Ileum Is Associated with Long-Term Success of Fecal Microbiota Transplantation.** *Digestive diseases and sciences*
Weingarden, A. R., Treiger, O., Ulsh, L., Limketkai, B., Goldenberg, D., Okafor, P., Sonu, I., Stollman, N., Neshatian, L.
2022
- **The Impact of Intermittent Fasting on Patients With Suspected Gastroesophageal Reflux Disease.** *Journal of clinical gastroenterology*

- Jiang, Y., Sonu, I., Garcia, P., Fernandez-Becker, N. Q., Kamal, A. N., Zikos, T. A., Singh, S., Neshatian, L., Triadafilopoulos, G., Goodman, S. N., Clarke, J. O.
2022
- **Environmental Pollutants are Associated with Irritable Bowel Syndrome in a Commercially Insured Cohort of California Residents.** *Clinical gastroenterology and hepatology : the official clinical practice journal of the American Gastroenterological Association*
Okafor, P. N., Dahlen, A., Youssef, M., Olayode, A., Sonu, I., Neshatian, L., Nguyen, L., Charu, V.
2022
 - **The Effects of Intermittent Fasting on Gastroesophageal Reflux Disease**
Jiang, Y., Goodman, S., Sonu, I., Garcia, P., Fernandez-Becker, N., Kamal, A., Zikos, T., Singh, S., Neshatian, L., Triadafilopoulos, G., Clarke, J.
LIPPINCOTT WILLIAMS & WILKINS.2021: S214
 - **GERD for the nongastroenterologist: successful evaluation, management, and lifestyle-based symptom control.** *Annals of the New York Academy of Sciences*
Stein, E., Sloan, J., Sonu, I., Kathpalia, P., Jodorkovsky, D.
2020
 - **Marijuana, Ondansetron, and Promethazine Are Perceived as Most Effective Treatments for Gastrointestinal Nausea.** *Digestive diseases and sciences*
Zikos, T. A., Nguyen, L., Kamal, A., Fernandez-Becker, N., Regalia, K., Nandwani, M., Sonu, I., Garcia, M., Okafor, P., Neshatian, L., Grewal, D., Garcia, P., Triadafilopoulos, et al
2020
 - **Baseline impedance via manometry and ambulatory reflux testing are not equivalent when utilized in the evaluation of potential extra-esophageal gastroesophageal reflux disease.** *Journal of thoracic disease*
Zikos, T. A., Triadafilopoulos, G. n., Kamal, A. n., Podboy, A. n., Sonu, I. S., Regalia, K. A., Nandwani, M. C., Nguyen, L. A., Fernandez-Becker, N. Q., Clarke, J. O.
2020; 12 (10): 5628–38
 - **Potential proton pump inhibitor-related adverse effects.** *Annals of the New York Academy of Sciences*
Perry, I. E., Sonu, I. n., Scarpignato, C. n., Akiyama, J. n., Hongo, M. n., Vega, K. J.
2020
 - **The esophageal mucosal barrier in health and disease: mucosal pathophysiology and protective mechanisms.** *Annals of the New York Academy of Sciences*
Gyawali, C. P., Sonu, I. n., Becker, L. n., Sarosiek, J. n.
2020
 - **Ninety-Six Hour Wireless Esophageal pH Study in Patients with GERD Shows that Restrictive Diet Reduces Esophageal Acid Exposure.** *Digestive diseases and sciences*
Triadafilopoulos, G., Korzilius, J. W., Zikos, T., Sonu, I., Fernandez-Becker, N. Q., Nguyen, L., Clarke, J. O.
2019
 - **Esophagogastroduodenoscopy and Esophageal Involvement in Patients with Pemphigus Vulgaris.** *Dysphagia*
Ozeki, K. A., Zikos, T. A., Clarke, J. O., Sonu, I. n.
2019
 - **A Positive Correlation Between Gastric and Esophageal Dysmotility Suggests Common Causality** *DIGESTIVE DISEASES AND SCIENCES*
Zikos, T. A., Clarke, J. O., Triadafilopoulos, G., Regalia, K. A., Sonu, I. S., Fernandez-Becker, N. Q., Nandwani, M. C., Nguyen, L. A.
2018; 63 (12): 3417–24
 - **Esophagogastroduodenoscopy and Esophageal Involvement in Patients With Pemphigus Vulgaris**
Ozeki, K., Zikos, T. A., Clarke, J., Sonu, I.
NATURE PUBLISHING GROUP.2018: S177
 - **Use of Esophageal pH Monitoring to Minimize Proton-Pump Inhibitor Utilization in Patients with Gastroesophageal Reflux Symptoms** *DIGESTIVE DISEASES AND SCIENCES*
Triadafilopoulos, G., Zikos, T., Regalia, K., Sonu, I., Fernandez-Becker, N. Q., Nguyen, L., Nandwani, M. R., Clarke, J. O.
2018; 63 (10): 2673–80

- **Use of Esophageal pH Monitoring to Minimize Proton-Pump Inhibitor Utilization in Patients with Gastroesophageal Reflux Symptoms.** *Digestive diseases and sciences*
Triadafilopoulos, G., Zikos, T., Regalia, K., Sonu, I., Fernandez-Becker, N. Q., Nguyen, L., Nandwani, M. C., Clarke, J. O.
2018
- **A Positive Correlation Between Gastric and Esophageal Dysmotility Suggests Common Causality.** *Digestive diseases and sciences*
Zikos, T. A., Clarke, J. O., Triadafilopoulos, G., Regalia, K. A., Sonu, I. S., Fernandez-Becker, N. Q., Nandwani, M. C., Nguyen, L. A.
2018
- **Persistent constipation and abdominal adverse events with newer treatments for constipation.** *BMJ open gastroenterology*
Sonu, I., Triadafilopoulos, G., Gardner, J. D.
2016; 3 (1)
- **Vitamin Abnormalities in Patients With Gastrointestinal Motility and Functional Disorders**
Sonu, I., Wang, L., Zia, J., Nguyen, L.
NATURE PUBLISHING GROUP.2015: S751
- **5-ASA Induced Recurrent Myopericarditis and Cardiac Tamponade in a Patient with Ulcerative Colitis** *DIGESTIVE DISEASES AND SCIENCES*
Sonu, I., Wong, R., Rothenberg, M. E.
2013; 58 (8): 2148-2150
- **Papillary thyroid cancer and inflammatory bowel disease: Is there a relationship?** *WORLD JOURNAL OF GASTROENTEROLOGY*
Sonu, I. S., Blonski, W., Lin, M. V., Lewis, J., Abera, F., Lichtenstein, G. R.
2013; 19 (7): 1079-1084
- **Higher rates of hepatitis B surface antigen (HBsAg) seroclearance in males and in hepatitis B e-antigen negative chronic hepatitis B (CHB) among treatment naive patients in a large multicenter US cohort study** *63rd Annual Meeting of the American-Association-for-the-Study-of-Liver-Diseases (AASLD)*
Nguyen, L. H., Sonu, I. S., Kin, K. C., Trinh, H. N., Li, J., Zhang, J. Q., Ahmed, A., Nguyen, M. H.
WILEY-BLACKWELL.2012: 352A–352A
- **Incidence and Risk Factors in the Development of Hepatocellular Carcinoma (HCC) in Non-Cirrhotic and Cirrhotic Patients with Chronic Hepatitis B (CHB): Results of a Multicenter US Cohort Study** *63rd Annual Meeting of the American-Association-for-the-Study-of-Liver-Diseases (AASLD)*
Sonu, I. S., Nguyen, L. H., Chen, C., Kin, K. C., Ha, N. B., Trinh, H. N., Ahmed, A., Li, J., Zhang, J. Q., Nguyen, M. H.
WILEY-BLACKWELL.2012: 478A–479A
- **Clinical Pharmacology of 5-ASA Compounds in Inflammatory Bowel Disease** *GASTROENTEROLOGY CLINICS OF NORTH AMERICA*
Sonu, I., Lin, M. V., Blonski, W., Lichtenstein, G. R.
2010; 39 (3): 559-?
- **An approach to the management of refractory ulcerative colitis.** *Minerva gastroenterologica e dietologica*
Sonu, I., Blonski, W., Lin, M. V., Lichtenstein, G. R.
2010; 56 (2): 213-231
- **An evaluation of geriatrics activities within internal medicine subspecialties** *AMERICAN JOURNAL OF MEDICINE*
Sonu, I. S., High, K. P., Clayton, C. P., Woolard, N. F., Hazzard, W. R.
2006; 119 (11): 995-1000

PRESENTATIONS

- A questionable investment for our patients - DDW 2015 (2015)
- Attributable Risk - DDW (2016)
- Vitamin Abnormalities in Patients with Gastrointestinal Motility and Functional Disorders - ACG (2015)
- Differences between a Community and an Academic Cohort of Patients with Chronic Hepatitis B (CHB) in the Development of Hepatocellular Carcinoma (HCC) - DDW (2013)
- Incidence and Risk Factors in the Development of Hepatocellular Carcinoma (HCC) in Non-Cirrhotic and Cirrhotic Patients with Chronic Hepatitis B (CHB) - AASLD (2012)

- Papillary thyroid cancer and inflammatory bowel disease: Is there an association? - DDW (2010)
- Which endoscopic or clinical factor is most predictive of future disease course in patients with ulcerative colitis? - DDW (2010)
- Risk of postoperative infections in IBD patients treated with perioperative anti-TNF therapy: A meta-analysis - DDW (2010)
- The risk of infectious complications associated with the use of immunosuppressive medications in elderly patients with inflammatory bowel disease - DDW (2010)
- Does development of diverse events with the first anti-TNF agent increase the risk of developing adverse events with other anti-TNF agent in patients with IBD? - DDW (2010)
- Prevalence and characteristics of patients with IBD who develop serrated adenomas - ACG (2010)