
BOOK REVIEW

The Second Brain: The Scientific Basis of Gut Instinct and a Groundbreaking New Understanding of Nervous Disorders and the Intestine

Book by Michael D. Gershon, M.D.

Reviewed by Virginia Saurman

In *The Second Brain: The Scientific Basis of Gut Instinct and a Groundbreaking New Understanding of Nervous Disorders and the Intestine*, Michael D. Gershon, MD, professor of Pathology and Cell Biology and former chairman of the department, at the College of Physicians and Surgeons at Columbia University Medical Center presents a comprehensive, engaging account of his thirty years of research in the field of neurogastroenterology.

“Those of us who deal in science...have a strong and objectionable tendency to hubris.” According to Dr. Gershon, this hubris arises from insufficient knowledge of and a failure to appreciate the past. The practice of neurogastroenterology is relatively new, and Michael Gershon is a leader in the field. However, it would be arrogant to say that Dr. Gershon is the father of neurogastroenterology—he humbly asserts that he is yet another researcher in who advanced knowledge of neurogastroenterology, albeit one who made significant advances in understanding the nerves of the gastrointestinal tract.

The book’s format reflects both aspects of a medical textbook and a memoir, divided in three parts: the Early Discoveries, the Travelogue, and the Origin of the Second Brain and Its Disorders.

Part I chronicles the history of the field of neurogastroenterology which can be traced back to the nineteenth century with the work of English researchers Bayliss and Starling, who worked with isolated dog intestine and studied the effects of stimulating the intestine. It contracted accordingly, thus hinting that there was a nervous system within the bowel. Gershon also gives a brief summary of the basic principles governing the function of nerves. In Chapters 3 and 4, he recounts his odyssey in trying to determine serotonin’s role in the gut, during his undergraduate studies in Cornell, and later moving to Oxford and to the Society for Neuroscience in Cincinnati, Ohio in 1981. It was long thought that serotonin was only a mood regulator found in the brain. In Cincinnati, he endured the “slings and arrows of outrageous colleagues.” Needless to say, the discovery was “heretical” and it took much ironclad research to convince the research community that 95% of the body’s serotonin was produced by the gut. After the dust had settled, this discovery was accepted as fact. This milestone paved the way for Gershon’s research at Columbia University where he continues to this day.

Part II, aptly titled ‘The Travelogue,’ follows the journey of food within the gastrointestinal tract, starting with ingestion. While this section of the book has the potential to be incomprehensible and dull, imposing Gershon’s lyrical descriptions

and approachable style make reading about something as detailed as the behavior of the lower esophageal sphincter something easy to comprehend. Within Part II, Gershon recounts the collaborative research he conducted with other neurologists from institutions such as the University of Vermont, Oxford, etc. These projects generally consisted on determining

the etiology of conditions like pancreatitis, stomach ulcers, and disorders of the colon. Throughout these chapters in the book, Gershon manages to include anecdotes about families and family members directly affected by various anomalies within the gut, further humanizing his medical and scientific efforts.

Part III chronicles Gershon’s most recent research and how it has contributed to the field of gastroenterology. The study of the development of the enteric nervous system reveals how functional bowel diseases occur when development goes awry. Because of this research, pharmaceutical companies have taken an interest in perfecting current drugs for patients suffering from functional bowel disease.

What is remarkable about this book is the engaging style in which it was written. The title hints of a complex, convoluted tome, but reading of it reveals a journey so much more entertaining than this might lend. Dr. Gershon successfully explains the morbid and the stomach-churning in a way that elicits both sympathy and amazement. He artfully persuades the reader into being engrossed with the burgeoning field of neurogastroenterology.

Virginia Saurman is an Assistant Editor for TuftScope.

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