1.1: Chapter Introduction

Nutrition is an evidence-based science. Nutritional scientists continuously advance our knowledge of nutrition by building on prior research.

Video Link 1.1.1

Nutrition Quiz: Listen to what Americans think 100 Calories looks like.
As we get started on our journey into the world of health and nutrition, our first focus will be to demonstrate that nutritional science is an evolving field of study, continually being updated and supported by research, studies, and trials. Once we establish this, your confidence will be strengthened in nutritional science to help guide your eating habits. Let’s begin with the story of hurry, curry, and worry: the story of *Helicobacter (H.) pylori*.

Peptic ulcers are painful sores in the gastrointestinal tract and can cause symptoms of abdominal pain, nausea, loss of appetite, and weight loss. The cure for this ailment took some time for scientists to figure out. If your grandfather complained to his doctor of symptoms of peptic ulcer, he was probably told to avoid spicy foods, alcohol, and coffee, and to manage his stress. In the early twentieth century, the medical community thought peptic ulcers were caused by what you ate and drank, and by stress. In 1915, Dr. Bertram W. Sippy devised the “Sippy diet” for treating peptic ulcers. Dr. Sippy advised patients to drink small amounts of cream and milk every hour in order to neutralize stomach acid. And then, increasingly, introduce soft bland foods with frequent meal times. For a while this diet sometimes worked, fooling both doctors and patients. However, the disappearance of peptic ulcer symptoms was likely the result of having a full stomach all the time, as the symptoms more often occur when the stomach is empty. Ultimately, the Sippy diet did not cure peptic ulcers and in the latter 1960s, scientists discovered the diet was associated with a significant increase in heart disease due to its high saturated fat content.

In the 1980s, Australian physicians Barry Marshall and Robin Warren Currey, R. “Ulcers—The Culprit Is *H. Pylori*!” National proposed a radical hypothesis—that the cause of ulcers was bacteria that could survive in the acidic environment of the stomach and small intestine. They met with significant opposition to their hypothesis but they persisted with their research. Their research led to an understanding that the spiral shape of the bacterium *H. pylori* allows it to penetrate the stomach’s mucous lining, where it secretes an enzyme that generates substances to neutralize
the stomach’s acidity. This weakens the stomach’s protective mucus, making the tissue more susceptible to the damaging effects of acid, leading to the development of sores and ulcers. *H. pylori* also prompt the stomach to produce even more acid, further damaging the stomach lining. Marshall actually drank a dish of *H. pylori* hoping to give himself an ulcer to prove his point. A few days later he was vomiting and had inflamed tissue in his stomach. The presence of *H. pylori* was confirmed. He then took an antibiotic and the symptoms of *H. pylori* infection dissipated. Experimental success? It still took years for the medical community to be entirely convinced of the link between peptic ulcers and *H. pylori*.

Video Link 1.1.2

YouTube Video about the discovery of *H. pylori*.

In 1994, the National Institutes of Health held a conference on the cause of peptic ulcers. There was scientific consensus that *H. pylori* cause most peptic ulcers and that patients should be treated with antibiotics. In 1996, the Food and Drug Administration (FDA) approved the first antibiotic that could be used to treat patients with peptic ulcers. Nevertheless, the link between *H. pylori* and peptic ulcers was not sufficiently communicated to health-care providers. In fact, 75 percent of patients with peptic ulcers in the late 1990s were still being prescribed antacid medications and advised to change their diet and reduce their stress. In 1997, the Centers for Disease Control and Prevention (CDC), alongside other public health organizations, began an intensive educational campaign to convince the public and health-care providers that peptic ulcers are a curable condition requiring treatment with antibiotics. Today, if you go to your primary physician you will be given the option of taking an antibiotic to eradicate *H. pylori* from your gut. Scientists have progressed even further and mapped the entire genome of *H. pylori*, which will hopefully aid in the discovery of even better drugs to treat peptic ulcers.
The *H. pylori* discovery was made recently, overturning a theory applied in our own time. The demystification of disease requires the continuous forward march of science, overturning old, traditional theories and discovering new, more effective ways to treat disease and promote health. In 2005, Marshall and Warren were awarded the prestigious Nobel Prize in medicine for their discovery that many stomach ulcers are caused by *H. pylori*—not by hurry, curry, and worry.

Make a commitment to empower yourself with scientific evidence as a strategy for achieving a healthier diet.

A primary goal of this text is to provide you with information backed by nutritional science and with a variety of resources that use scientific evidence to optimize health and prevent disease. In this chapter, you will see that there are many conditions and deadly diseases that can be prevented by good nutrition. You will also discover the many other determinants of health and disease, how the powerful tool of scientific investigation is used to design dietary guidelines and recommendations that will promote health and prevent disease.