From Metchnikoff to Dash—
How Probiotics Came to America and the Global Marketplace

Who are these men? What instills such passionate pursuit of science and health?

Elie Metchnikoff was born on May 16, 1845, near Kharkoff, Ukraine. He studied natural sciences at the University of Kharkoff. In 1888, Metchnikoff took a position at the Pasteur Institute laboratory in Paris. Metchnikoff became the deputy director in 1904 and remained at the Pasteur Institute for the remainder of his career.

Metchnikoff and Paul Ehrlich received the Nobel Prize for Medicine in 1908 for research on cellular immunity. He was awarded the honor for the theory of phagocytosis, which demonstrates the process of how specific white blood cells can break down harmful bacteria in the body. Dr. Metchnikoff went on to identify an apparent link between acidophilus-type bacteria and extended lifespan for humans. He discovered Lactobacillus bulgaricus among the yogurt of long-lived Bulgarian peasants. He was pivotal in starting the relatively modern discipline of probiotics (dietary supplements containing potentially beneficial bacteria and yeasts taken in adequate quantities.)

FROM METCHNIKOFF TO DASH

In the 1970s, E. coli threatened livestock in South Dakota and other states of the U.S. While working as the director of Food and Drug for South Dakota from 1973 to 1980, Dr. Dash discovered that a probiotic product was approved as a drug in the 1950s by the United States Department of Agriculture. However, antibiotics, the miracle drug of the time, were favored over the probiotic product. Soon, Dr.
Dash discovered that probiotics could be 97 percent effective in combating *E. coli* infection in pigs, which is about the same effectiveness as the antibiotic neomycin sulfate. “The overuse of antibiotics was certainly having an adverse effect on a healthy balance of beneficial bacteria in both humans and animals,” says Dr. Dash. “But if people could supplement their diets with a quality probiotic, they could help maintain healthy populations of beneficial bacteria from which many health benefits would emerge.”

Yet, while working within government, Dr. Dash perceived a dire problem with the quality of probiotic products coming onto the market. A few companies had developed a way of delivering quality probiotic supplements to the public.

Dr. Dash had a real vision and could see that making probiotics available to the public would be a great opportunity, especially with the overuse of antibiotics and the public’s desire to find ways to stay healthy.

During Dr. Dash’s tenure with the government, he was very critical about nutritional labeling and misleading information given to consumers by manufacturers. Dr. Dash became chairman of the National Probiotic Products Committee because of his concerns about honesty in labeling and quality control. He worked to develop quality control and labeling standards, which are now currently being followed by the industry worldwide. In particular, that we now measure probiotic potency by colony-forming units or CFUs is due to Dr. Dash’s desire to find a reliable standard.

In order to make high-quality probiotic strains available to the consumer, Dr. Dash introduced many other innovations in the field. He was the first to introduce a unique process of commercially producing, freeze-drying and naturally stabilizing the bacterium that made use of University of Wisconsin Technology, and the first to package probiotics with nitrogen to improve the stability of probiotics. He was a pioneer in introducing non-dairy, acid- and bile-resistant probiotics. Dr. Dash was also the first to incorporate the prebiotic fructooligosaccharides with probiotics to enhance their growth in intestines.

With all of these innovations, Dr. Dash has popularized high-quality probiotic strains that include *L. acidophilus* DDS®-1. The health attributes of *L. acidophilus* DDS®-1 have been well documented and include:

- Human isolates that adapt well to the human body
- Ability to promote digestive health
- Acid- and bile-resistance that make it well-suited for intestinal survival
- Creates an unfavorable environment for pathogens
- Maintains natural immune defenses
- Contributes to good balance of intestinal flora

In July 2010, Dr. Dash established an endowed position at South Dakota State University for the College of Nutrition and Food Science to provide funding for research, scholarships and new programs. Thanks to the pioneering work of Dr. Dash and Dr. Metchnikoff, awareness of probiotics has significantly increased from five to fifty-five percent among the general public; sales have gone up from $10 million in 1979 to $30 billion in 2010. Dr. Dash has developed many premium probiotic products including Probiopius DDS®, DDS® Plus, DDS® Junior, DDS® Acidophilus, Cran-Gym DDS® and ProbioGreen™ as well as many probiotic products for other companies worldwide. And with independent results demonstrating these products deliver their label claims, consumers can be sure they are receiving quality probiotic supplements.

“Probiotics are more important to take daily than a multivitamin.”

— Dr. S.K. Dash

Yogurt and sauerkraut are good sources of probiotics. Thanks, in part, to the work of Dr. Dash, we can now also get probiotics from nutritional supplements.