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Giants in Obstetrics and Gynecology A profile of Emanuel A. Friedman, MD, DMedSci

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Dr. Emanuel A. Friedman, Professor Emeritus of Obstetrics, Gynecology, and Reproductive Biology at Harvard Medical School, is world-renowned for his contributions to obstetrics, which include the visual description of the labor curve, often called the “Friedman Curve.”

Born in Brooklyn, New York, Dr. Friedman describes himself as “coming from humble origins.” His father was educated and a rabbi; his mother was a homemaker. Always introverted, he considers that he had a modest family life. He became intellectually “alive” through reading; he was fascinated with Charles Dickens and read all of his novels, which he now says transported him from the “slums of Brooklyn to the dredges of London.”

A key part of his intellectual awakening occurred thanks to being drafted into the U.S. Navy during World War II. “I saw a world I had never seen, and I also saw prejudice,” Dr. Friedman recalls.

Upon his return from the Navy, he took advantage of the U.S. government’s G.I. Bill to pursue an education in medicine. He graduated in 1951 from Columbia University’s College of Physicians and Surgeons and was later awarded a Doctorate in Medical Science from Columbia in 1959 and then a Master of Arts from Harvard University (*honoris causa*) in 1969. Dr. Friedman was an intern at Bellevue Hospital, Cornell Division, in New York and completed his residency in obstetrics and gynecology at Columbia Presbyterian Medical Center in New York in 1957. Subsequently, he joined the faculty in a department led by Professor Howard C. Taylor, Jr.

How was the labor curve “born?” This occurred in New York when Dr. Virginia Apgar, the notable anesthesiologist who designed the famous Apgar score method, asked Dr. Friedman a fundamental question that led to his seminal work describing the partogram. Dr. Apgar was interested in caudal anesthesia for pain relief during labor and asked him how she could determine whether the administration of a caudal block would alter the progress of labor. Dr. Friedman quickly realized that there was very little objectively determined information available about the progress of labor. He recognized the importance of the question and sought an opportunity to assess such a fundamental biologic process.

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One night while Dr. Friedman was on call at Columbia, his wife went into labor at another hospital, and he asked whether he could be excused to attend the birth of his first child. When his request was denied, Dr. Friedman sublimated his disappointment and frustration by taking pencil to paper to record serial examinations in graphic form, including frequency of contractions, cervical dilatation and effacement, fetal station, time, and other factors, that described the progress of labor in patients over the course of time. By the next morning, he realized that the frequency of contractions was uninformative but that progressive cervical dilatation had a striking sigmoid (S)-shaped curve characterized by a very slow change at the outset and followed by, after a certain timeframe, an acceleration phase. This was the birth of the “latent phase of labor,” the portion of labor during which contractions occur with little change in cervical dilatation, and the “active phase” during which cervical dilatation progresses quickly. At the end of his call, Dr. Friedman was able to go to the other hospital for the birth of his daughter.

The information Dr. Friedman collected that night subsequently formed the basis for his first article—“Graphic Analysis of Labor”—that was published in the *American Journal of Obstetrics and Gynecology* and is a well-read classic freely available on the Journal website.¹

Because the circumstances that led to this study coincided with the birth of his first child, we also know the precise date of birth for the Friedman curve—June 11, 1952. Dr. Friedman has always emphasized that he “did not create anything” but rather that he just described a phenomenon of nature. He is also keen to clarify that he never referred to the sigmoid labor curve as the “Friedman Curve.”

The first study was then followed by a systematic series of examinations of the factors related to the progression of labor, the development of a nomenclature for labor disorders, studies of the impact of these disorders on the fetus, and a proposed management program to optimize outcomes. The terms “prolonged latent phase,” “arrest of dilation,” “arrest of descent,” “protracted dilation,” and “protracted descent,” which are all used today to describe abnormal labor, were derived from the pioneering work of Dr. Friedman.²⁻⁴

Dr. Friedman participated in the Collaborative Perinatal Project in the United States, which was funded by the National Institutes of Health, that collected information about pregnancies, labor, and their outcomes for approximately 60,000 women.⁵ While examining these data, Dr. Friedman realized that babies who were delivered by mid-pelvic forceps often had neurologic disabilities. Dr. Friedman was legendary for his skills in operative vaginal delivery and as a gynecologic surgeon. Yet, he had in front of him evidence that even the babies he had delivered with his considerable skill were more likely to have sustained damage.⁶ This led him to embark on a crusade to inform the obstetric community that mid-pelvic deliveries, regardless of the surgeon’s skill, were unreasonably risky for babies. An unpopular view at the time and opposed by many, this view was accepted, eventually, and mid-pelvic operative deliveries are now no longer performed in the United States.⁷

Dr. Friedman went on to become Chairman of the Department of Obstetrics and Gynecology at Chicago Medical School and then held that same post at Harvard Medical School while

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