

# NINA STARR BRAUNWALD, MD

Nina Starr Braunwald, M.D., was one of the first women to train as a general surgeon at New York's Bellevue Hospital, from 1952 to 1955. A pioneer in the field of heart surgery, she led the team that was the first to replace a human heart valve (a valve which she has also designed). She was the first woman to be certified by the American Board of Thoracic Surgery, and the first woman to be elected to the American Association for Thoracic Surgery.

Braunwald completed her training in general surgery and her residency at Georgetown University Medical Center, with a postdoctoral fellowship in Dr. Charles Hufnagel's surgical laboratory. Then with her mentor, Dr. Andrew G. Morrow, at the Clinic of Surgery at the National Heart Institute (NHI, now the National Heart, Lung, and Blood Institute) she began the work that would make her famous. She benefited from the early support of Dr. Morrow, who promoted Dr. Braunwald in professional networks and made available to her the resources necessary for her landmark work on an artificial heart valve.



In 1960, at the age of 32, Dr. Braunwald led the operative team that implanted the first successful artificial human mitral valve replacement, which she had designed and fabricated.

She then developed a cloth-covered mechanical valve (the Braunwald-Cutter valve), which was implanted into thousands of patients during the late 1960s and early 1970s. Her other significant contributions include development of the stented aortic homograft (a graft of same-species tissue, in this case human tissue) for mitral valve replacement, surgical treatment of chronic thromboembolic disease, and pioneering techniques for the use of tissue cultures to discourage the formation of clots when prosthetic valves and circulatory assist devices are in use.

Despite her successes, Dr. Braunwald had to struggle for professional opportunities after leaving Morrow's department. As a mother of three children, she balanced family responsibilities with the hefty demands of cardiac surgery. Her widower, Dr. Eugene Braunwald, describes her approach to both as doing only what she considered essential, doing it intensely, and not spending much time, energy, or motion on anything else. Yet she did manage to pursue her hobbies of painting, sculpture, and horseback riding, and later took great delight in her grandchildren. An early colleague describes her as pioneering, determined, yet gentle.