

Marshall Henry Klaus was a scientist and pediatrician who studied maternal-infant bonding in the twentieth century in the United States. Maternal-infant bonding is the psychological and chemical attachment between mother and infant. Klaus cofounded DONA International, an organization [5] that trains birthing aides, called doulas, to provide physical and emotional support to laboring mothers. He also studied the differences between the layouts and quality of care provided in nurseries and birthing centers in different countries and compared them to those found in the United States. Klaus’s study influenced national and international initiatives to create hospital policies focused on promoting early bonding between mother and infant. Klaus catalyzed the advent of doulas and international policies that emphasized interaction between mothers and their infants.

Klaus was born on 6 July 1927 to Caroline Epstein Klaus and Max Henry Klaus in Lakewood, Ohio. His mother was a teacher and his father was a physician. Klaus had one younger brother. Carl, who was born in 1932. The family lived near Cleveland, Ohio, where Klaus attended elementary school until his father’s death in 1934. Shortly following his father’s death, Klaus’s mother was diagnosed with breast cancer. Klaus claimed in an interview that certain events in his childhood were important for his future career. One such event took place shortly after his mother’s cancer diagnosis, when she was being treated with radiation therapy. Klaus later reported being brought to the hospital, where his mother was ‘attaching something’ to her breast. As a result, he noted that he kept a professional distance from that hospital throughout his entire career. Klaus also indicated that his mother’s cancer eventually spread to her eyes and caused her to become blind. Klaus stated that the fact that his mother was unable to look directly at him sparked an early interest in how infants observe their mother’s face and vice versa.

After his mother died in 1933, Klaus and his brother went to live with extended family on his father’s side, where they were encouraged to pursue their education. His uncle, a physician, encouraged both Klaus and his brother to prepare for a university education while putting them through high school in the inner city of Cleveland. Klaus’s uncle regularly had patients and other doctors come to their home for dinner, exposing Klaus to the field of medicine. In 1945, when Klaus was sixteen, his uncle died and left the family estate to Klaus and his brother. There they could reside until after they finished their college education. That same year, Klaus was accepted into Case Western Reserve University in Cleveland, Ohio, where he completed his undergraduate studies in three years. Upon graduating in 1947, Klaus was not accepted into medical school right away. He applied the following year again and got accepted into Case Western Reserve University Medical School in Cleveland, Ohio, in 1948. During his third year of medical school, Klaus contracted polio, which caused permanent mobility problems in one of his arms, his back, and mildly, in his legs. In 1950, during a brief hiatus from school due to polio, Klaus married Lois Krieger, a chemist, with whom he had four children, however, the couple later divorced. Klaus recovered from polio and graduated from medical school with honors in 1951.

After medical school, Klaus entered a medical residency program and began researching pediatric medicine, or the medical care of infants. In 1951, he started a residency in pediatrics at the Academy of Medicine of Cleveland and Northern Ohio in Cleveland, Ohio. Initially, Klaus wanted to pursue obstetrics, the branch of medicine concerning childbirth. However, according to a later interview, Klaus chose pediatrics over obstetrics because he could not deliver infants with only one functional hand due to his polio. While in his first year of residency, Klaus attended lectures by Anna Freud, a child psychologist. Freud’s lectures focused on the psychological impact of children who had lost their mother figures early in life and on the psychological effects of hospitalization on children’s development. According to Klaus, Freud’s lectures resonated with his own experience of losing his mother. Those lectures also contributed to his clinical and research interests in the bond between mother and child. Klaus’s focus on infant care began after the completion of his residency in 1954. Klaus practiced as a pediatrician but left primary care to do research after a few years.

Klaus began his research career by investigating the effects of different technologies on pediatric physiology. In 1959, Klaus and his family moved to Novato, California, a suburb outside San Francisco, California, where he joined the University of California, San Francisco Cardiovascular Research Institute or CVRI in San Francisco, California. Initially, Klaus wanted to pursue obstetrics, the branch of medicine concerning childbirth. However, according to a later interview, Klaus chose pediatrics over obstetrics because he could not deliver infants with only one functional hand due to his polio. Klaus and Kennell, who collaborated on maternal-infant bonding studies for the rest of Klaus’s career and, in 1985, they published a book titled, "Neonatal Separation: The Maternal Side of Interactional Deprivation." That same year, Klaus was accepted into Case Western Reserve University in Cleveland, Ohio, where he completed his undergraduate studies in three years. Upon graduating in 1947, Klaus was not accepted into medical school right away. He applied the following year again and got accepted into Case Western Reserve University Medical School in Cleveland, Ohio, in 1948. During his third year of medical school, Klaus contracted polio, which caused permanent mobility problems in one of his arms, his back, and mildly, in his legs. In 1950, during a brief hiatus from school due to polio, Klaus married Lois Krieger, a chemist, with whom he had four children, however, the couple later divorced. Klaus recovered from polio and graduated from medical school with honors in 1951. Klaus and his family moved to Novato, California, a suburb outside San Francisco, California, where he joined the University of California, San Francisco Cardiovascular Research Institute or CVRI in San Francisco, California. Initially, Klaus wanted to pursue obstetrics, the branch of medicine concerning childbirth. However, according to a later interview, Klaus chose pediatrics over obstetrics because he could not deliver infants with only one functional hand due to his polio. While in his first year of residency, Klaus attended lectures by Anna Freud, a child psychologist. Freud’s lectures focused on the psychological impact of children who had lost their mother figures early in life and on the psychological effects of hospitalization on children’s development. According to Klaus, Freud’s lectures resonated with his own experience of losing his mother. Those lectures also contributed to his clinical and research interests in the bond between mother and child. Klaus’s focus on infant care began after the completion of his residency in 1954. Klaus practiced as a pediatrician but left primary care to do research after a few years.

Following his 1973 study in Guatemala, Klaus shifted his research focus to investigate why the presence of the female student sped up the pregnant women’s laboring process. In 1980, Klaus and Kennell found that supportive companions had a positive effect on many different aspects of labor, including the length of labor, the development of perinatal problems, and the success of breastfeeding. He later concluded that his study demonstrated the importance of support and companionship during labor and delivery.

In the 1990s, Klaus’s findings influenced a global initiative and organization [6], in 1991, World Health Organization, or WHO, in partnership with the United Nations International Children’s Fund, or UNICEF, passed the Baby-Friendly Hospital Initiative. That initiative recognized hospitals and birthing centers that focused on infant feeding and maternal-infant bonding as a Baby-Friendly Hospital, in large part due to Klaus’s research. The initiative reduced the number of newborns placed in nurseries, and promoted skin-to-skin contact and breastfeeding. In 1992, along with his wife and Kennell, Klaus cofounded DONA International, which was then called Doulas in Canada. DONA International is an organization [7] that trains women to become certified doulas, and the organization [7] places a large emphasis on maternal-infant bonding and breastfeeding.

Klaus continued to deliver lectures on maternal-infant bonding across the United States throughout the early 2000s. On 15 August 2017, Klaus died in San Francisco, California.

Sources

Marshall Henry Klaus was a scientist and pediatrician who studied maternal-infant bonding in the twentieth century in the United States. Maternal-infant bonding is the psychological and chemical attachment between mother and infant. Klaus cofounded DONA International, an organization that trains birthing aides, called doulas, to provide physical and emotional support to laboring mothers. He also studied the differences between the layouts and quality of care provided in nurseries and birthing centers in different countries and compared them to those found in the United States. Klaus’s study influenced national and international initiatives to create hospital policies focused on promoting early bonding between mother and infant. Klaus catalyzed the advent of doulas and international policies that emphasized interaction between new mothers and their infants.

**Subject**

- DONA International
- Mother and infant
- Mother-Infant Interaction
- Doulas
- Labor
- Obstetrics

**Topic**

- People

**Publisher**

Arizona State University. School of Life Sciences. Center for Biology and Society. Embryo Project Encyclopedia.

**Rights**

Copyright Arizona Board of Regents Licensed as Creative Commons Attribution-NonCommercial-Share Alike 3.0 Unported (CC BY-NC-SA 3.0) http://creativecommons.org/licenses/by-nc-sa/3.0/

**Format**

Articles

**Last Modified**

Wednesday, July 18, 2018 - 04:02

**DC Date**

2018-07-17

**DC Date Accessioned**

Tuesday, July 17, 2018 - 20:51

**DC Date Available**

Tuesday, July 17, 2018 - 20:51

**DC Date Created**

2018-07-17

**DC Date Created Standard**

Tuesday, July 17, 2018 - 07:00

- Contact Us

© 2021 Arizona Board of Regents

- The Embryo Project at Arizona State University, 1711 South Rural Road, Tempe Arizona 85287, United States

**Source URL**


**Links**

2. https://embryo.asu.edu/keyworks/marshall-klaus
4. https://embryo.asu.edu/keyworks/emotional-support
11. https://pediatrics.aappublications.org/content/pediatrics/45/2/197.full.pdf
12. https://www.dona.org/the-dona-advantage/about/history/
17. https://books.google.com/books?id=PNvY619HMqC&oi=fnd&pg=PR11&dq=Normality+and+pathology+in+childhood:+ Assessments+of+development+&ots=NKvYt9g8hwM&sig=WyvIBX9HueP9NC
24. https://embryo.asu.edu/topics/people
25. https://embryo.asu.edu/formats/articles