Edwin Carlyle (Carl) Wood (1929–2011) [1]

By: Tuoti, Whitney Alexandra Keywords: Monash IVF [2] history of IVF [3]

Edwin Carlyle Wood, also known as Carl Wood, was a physician who helped develop the overall processes behind *in vitro* fertilization [5], or IVF. From 1964 to 1992, Wood worked as a professor of obstetrics and gynecology at Monash University in Melbourne, Australia, where he was one of the first in the world to lead a team of physicians to establish IVF as a proven treatment for infertility [6]. IVF refers to a medical procedure in which scientists inseminate an egg [7] cell with a sperm [8] cell outside of the body, such as in a glass dish in a clinical setting. Wood helped establish some of the first successful IVF pregnancies and births, and his findings throughout his years of practice helped to standardize the procedure. Wood also advocated for the right for women to have an abortion [9], and co-founded the Family Planning Association of Victoria in Australia at a time when there were not many abortion [8] clinics in operation. Through his early contributions to IVF, Wood provided new options for people to have offspring, which as of 2021, has up to a 21.3 percent chance of producing a live birth.

Wood was born on 28 May 1929 in Melbourne, Australia, to Nellie Clayton Miller and Carlyle Sanford Wood. Wood's father was a gynecologist, which is a physician who focuses on the study and treatment of women's reproductive health. Wood had a brother named Alex Wood, who later became an urologist. A urologist is a physician who specializes in the study and treatment of the urinary system. According to his brother, Wood was always known as a brilliant student, even in his early years of schooling. He attended school at Wesley College, a boarding school in Melbourne, Australia. He was then accepted to study medicine at the University of Melbourne, completing both a bachelor of medicine and a bachelor of surgery degree with honors in 1952. Outside of medicine, Wood swam and played tennis.

Wood spent his graduate training at Alfred Hospital and The Royal Women’s Hospital in Melbourne, Australia, for four years after graduation. In 1957, he traveled to the United Kingdom where he pursued general, urologic, and plastic surgery training. Two years later in 1959, Wood became a lecturer at Queen Charlotte’s and Chelsea Hospital for Women and Institute of Obstetrics and Gynecology while doing postgraduate research part-time at the Royal Veterinary College in London. In that same year, Wood married Judith Badger, who was one of his nursing colleagues.

In 1962, while working as a lecturer at Queen Charlotte’s and Chelsea Hospital, Wood co-founded the Blair Bell society, an organization [10] that encouraged research on human reproduction. At that time, Wood took a few months off work to travel from London, United Kingdom, to New York City, New York, and study as a research associate at the Rockefeller Institute [11], where he studied reproductive medicine, specifically uterine activity during pregnancy [12] in both humans [13] and rabbits. In 1964, Wood went back to Melbourne to work at Monash University’s Queen Victoria Medical Center as a Foundation Professor and Chairman of the Department of Obstetrics and Gynecology, where he spent the next twenty-nine years and where he researched IVF.

IVF is a medical procedure designed to give people the option to have offspring without traditional sex. Some people who use IVF have infertility [6], which is the inability to get pregnant or maintain a pregnancy [12]. Though scientists had experimented with the possibility of IVF around the 1960s, none had been able to successfully fertilize a human egg [7] cell through IVF techniques. In 1971, as department chairman, Wood created a human IVF research program at Queen Victoria Medical Center in Melbourne, Australia, with physicians John Leeton and Alex Lopata. Both Leeton and Lopata were physicians who specialized in the study of embryos and their development. Before the end of 1971, the team was already collecting egg [7] cells from female volunteers. With Wood's assistance, they were also making the first attempts to fertilize human egg [7] cells in a laboratory located in the back of Lopata's office.

Initially, Wood and his team's IVF program did not have many participants. By 1972, Wood began collaborating with gynecologist Ian Johnston, who worked at the Royal Women’s Hospital in Melbourne at the time. Based on their shared interests in human IVF, Johnston joined the team, which resulted in the program expanding to include the Royal Women's Hospital in Melbourne. There, the team converted a janitor’s storeroom into a second IVF laboratory. Wood and his team also began to outline the procedures involved with human IVF, including how to harvest the egg [7] cells from female patients, how to inseminate the egg [7] cells with sperm [8] cells, and how to implant the fertilized egg [14] back into a female’s uterus [15]. By 1973, the program was ready to begin transferring fertilized eggs to the volunteers.

In 1973, Wood and his team achieved one of the world’s first clinical IVF pregnancies, although a few days later it ended in an early miscarriage [16]. The scientists had to procure the patient's egg [7] cells through a surgical procedure, and after they had implanted the inseminated egg [7] cells back into her uterus [15], they received positive results that the developing blastocyst [17] had implanted into her uterus [15]. However, days later, the patient’s surgical wound burst open, which due to the trauma and resulting surgeries, caused her to miscarry her pregnancy [12]. Although the pregnancy [12] ended in an early miscarriage [16], it showed that human IVF could be successful.
In 1977, the Ford Foundation granted Wood's IVF research program 750,000 US dollars with the intent that the program's advancements would lead to the development of new contraceptives. After they obtained the grant, Wood was able to recruit physician Alan Trounson 18 to his IVF research team. In 1978, Wood assigned Trounson to a team separate from Lopata's team, with the intent that competition between the two teams would progress the program's work. Two years later in 1980, the program began an IVF experiment involving participants John and Linda Reed. Eventually, the experiment led to one of Australia's first full-term IVF pregnancies, which resulted in a neonate named Candice Reed. That accomplishment showed that an embryo which was frozen for a period of time in a laboratory setting had the ability to successfully implant itself into a uterus 15 and then develop into a fetus 19.

In the 1980s, Wood expanded his research into further areas related to reproductive medicine. Some examples of his research involved studies in contractions during birth, the methods for checking a fetus' health status, and the psychological effects of hysterectomies. A hysterectomy 20 is a surgical procedure involving the removal of the uterus 15. Wood also wrote over twenty-three books and 400 research papers. One of his publications included Hysterectomy: How to Deal with the Physical and Emotional Aspects, written with researchers Lorraine Dennerstein and Graham Burrows, in which they discussed various methods on how to deal with the aftermath of a hysterectomy 20 procedure. Wood's research into the psychological effects of hysterectomies tied into his advocacy for a more holistic approach to women's health. Instead of viewing a woman's physical, mental, and emotional states as separate from one another, Wood viewed those states as all having a part in how a woman's overall health is affected, especially during pregnancy 12. Although abortion 9 in Australia during the 1980s was not illegal, abortion 9 centers in the country were scarce. In response, Wood contributed toward the abortion 9 movement by co-founding the Family Planning Association of Victoria in Australia.

During Wood and his wife's marriage, they had three children, named Gavin, Simon, and Caroline Wood. However, in 1982 during the height of Wood's publicity, he and his wife divorced. Despite controversies and criticisms Wood faced at the time over the ethics of IVF procedures, he was awarded the Commander of the British Empire in 1982. In 1988, Wood received the Axel Royal College of Obstetricians & Gynecologists. "Blair Bell Research Society." RCOG. https://www.rcog.org.uk/en/careers-

Sources


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