

[Gordon Watkins Douglas \(1921-2000\)](#) ^[1]

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Gordon Watkins Douglas researched cervical cancer, breach delivery, and treatment of high blood pressure during [pregnancy](#) ^[5] in the US during the twentieth century. He worked primarily at Bellevue Hospital Center in New York, New York. While at Bellevue, he worked with William E. Studdiford to develop treatments for women who contracted infections as a result of illegal abortions performed throughout the US in unsterile environments. Douglas also established the first [contraception](#) ^[6] and [pregnancy](#) ^[5] termination clinic at Bellevue Hospital shortly after the legalization of [abortion](#) ^[7] as a result of the 1973 US Supreme Court ruling in *Roe v. Wade* ^[8]. Furthermore, Douglas showed that fetal and maternal cells exchange between the pregnant woman and [fetus](#) ^[9] during [pregnancy](#) ^[5], which led to the later development of non-invasive prenatal testing in the early twenty-first century.

Douglas was born on 2 June 1921 in Midlothian, Virginia, to mother Virginia Watkins Douglas and father Vivian Triplette Douglas. After graduating from Cantonsville High School in Baltimore, Maryland, in 1938, Douglas earned a Bachelor of Science in biology at [Princeton University](#) ^[10] in Princeton, New Jersey. Following his graduation in 1942, Douglas enrolled in [Johns Hopkins University School of Medicine](#) ^[11] in Baltimore, Maryland, to pursue a medical degree. During World War II, Douglas joined the United States Armed Forces and served two years in the United States Air Force. He then finished the Johns Hopkins' medical program and graduated in 1945, but he spent another year interning at the Medical School in Baltimore, Maryland. In 1945, he married Elizabeth Jane Burnside, and they later had four children together.

At the end of his military service in 1948, Douglas became a medical resident at Bellevue Hospital Center. While at Bellevue, Douglas worked with William E. Studdiford, the director of Bellevue's obstetrical and gynecological service. In 1950, Studdiford and Douglas published a study on the diagnosis of cervical cancer. They found that when biopsies of patients' cervixes appeared abnormal, those abnormal results helped scientists or health professionals identify potentially cancerous cells and begin early treatment for cervical cancer. Douglas finished his medical residency in 1952, and he became a practicing obstetrics and gynecological doctor at Bellevue Hospital Center. In 1954, Studdiford and Douglas published an article on the risks of major gynecological surgery, such as the removal of cervical cancer, in elderly patients.

Studdiford and Douglas continued their collaboration to address gynecological issues, such as septic abortions. A septic [abortion](#) ^[7] is an [abortion](#) ^[7] or [miscarriage](#) ^[12] that causes severe uterine infection in the woman and if left untreated, the infection can kill the woman. During the 1950s, medical abortions were illegal in the US. Women still sought abortions, which non-medical professionals performed in unsafe and unsterile environments, sometimes called back alley procedures. In an unsterile environment, those procedures often resulted in septic abortions and the Bellevue Hospital Center treated many infected women. Between 1940 and 1954, the doctors in the gynecological department of Bellevue hospital reported treatment for 7,000 problems caused by abortions, 2,500 of which were septic abortions.

In 1956, Studdiford and Douglas published the article "Placental bacteremia: a significant finding in septic [abortion](#) ^[7] accompanied by vascular collapse," which detailed cases of septic abortions and their symptoms, as well as treatments that resulted in higher survival rates for affected women. In 1956, Douglas was promoted to Studdiford's position as director of obstetrics and gynecology at Bellevue Hospital. Douglas also became professor and chair of the Department of Obstetrics and Gynecology at [New York University](#) ^[13] School of Medicine in New York, New York.

In 1959, Douglas and a team of researchers from both Bellevue and [New York University](#) ^[13] found evidence of fetal cells in the maternal blood stream. In particular, they found that fetal cells from the [placenta](#) ^[14] (trophoblasts) constantly move into the maternal blood stream during [pregnancy](#) ^[5]. Though previous studies had found that trophoblasts migrated into the maternal blood stream when the pregnant woman died during [pregnancy](#) ^[5], Douglas's study was one of the earliest to indicate that cells constantly exchange between the pregnant woman and [fetus](#) ^[9] during [pregnancy](#) ^[5]. That discovery helped researchers in 2008 to develop tests in which researchers used fetal cells in the maternal blood stream to test for fetal abnormalities.

Douglas spent thirty years, from 1956 to 1986, as director of obstetrics and gynecology at Bellevue, and as chair and professor of the department of obstetrics and gynecology at [New York University](#) ^[13]. During those thirty years, he published works about the risks of breach delivery, which occurs when a [fetus](#) ^[9] exits the [womb](#) ^[15] feet-first during birth, instead of head-first.

In 1962, Douglas co-authored a paper on the appropriate treatments for a condition that researchers then called toxemia in [pregnancy](#) ^[5]. By the twenty-first century, researchers referred to toxemia in [pregnancy](#) ^[5] as pre-eclampsia, a condition characterized by high maternal blood pressure and significant amounts of protein in maternal urine. If left untreated, pre-eclampsia can cause dangerous seizures during [pregnancy](#) ^[5].

While Director at Bellevue, Douglas established a [contraception](#)^[6] clinic in Bellevue Hospital in 1958. Later in 1970, when the state of New York legalized abortions prior to the twenty-fourth week of [pregnancy](#)^[5], he established a [pregnancy](#)^[5] termination clinic. Douglas spent most of his time at Bellevue practicing medicine rather than researching.

From 1970 to 1974, Douglas served as president of the [American Board of Obstetrics and Gynecology](#)^[16] headquartered in Dallas, Texas. In 1973, Douglas and his first wife Elizabeth Burnside divorced, and Douglas married Jody Leslie Blasi. He was president of the American Gynecological and Obstetrical Society in 1976, and from 1978 to 1980, he was president of the American Board of Medical Specialties, headquartered in Chicago, Illinois.

In 1986, Douglas resigned as chair of the obstetrics and Gynecology department at [New York University](#)^[13], though he remained a part of the faculty until 1995. However, he continued to research. In 1989, Douglas contributed to research on the use of [umbilical cord](#)^[17] blood in the treatment of Fanconi [anemia](#)^[18], a blood disorder that causes the failure of bone marrow, or that damages the [stem cells](#)^[19] that produce blood cells. That year, Douglas published work on [umbilical cord](#)^[17] blood as a source of [stem cells](#)^[19] that researchers could use in various treatments. He researched [umbilical cord](#)^[17] blood throughout the early 1990s, and in 1993, he was listed on the US patent for the process of isolating and preserving the [stem cells](#)^[19] found in [umbilical cord](#)^[17] blood. Douglas continued to practice medicine until 1993. On 29 July 2000, Douglas died in Mantoloking, New Jersey, at the age of seventy-nine.

Sources

1. Boyse, Edward A., Hal E. Broxmeyer, and Gordon W. Douglas. "Isolation and preservation of fetal and neonatal hematopoietic stem and progenitor cells of the blood and methods of therapeutic use." U.S. Patent 5,192,553, issued March 9, 1993. <http://www.google.com/patents/US5192553>^[20] (Accessed September 12, 2014).
2. Broxmeyer, Hal E., Gordon W. Douglas, Giau Hangoc, Scott Cooper, [Judith Bard](#)^[21], Denis English, Margaret Army, Lewis Thomas, and [Edward A. Boyse](#)^[22]. "Human [umbilical cord](#)^[17] blood as a potential source of transplantable hematopoietic stem/progenitor cells." *Proceedings of the National Academy of Sciences*^[23] 86 (1989): 3828–32. <http://www.pnas.org/content/86/10/3828.full.pdf+html>^[24] (Accessed May 15, 2014).
3. "Douglas, Gordon Watkins". *Marquis Who Was Who in America 1985-present*. New Providence: Marquis Who's Who LLC, 2013.
4. Douglas, Gordon Watkins, and William E. Studdiford. "The diagnosis of early carcinoma of the [cervix](#)^[25]." *Surgery, Gynecology & Obstetrics* 91 (1950): 728. <http://cancerres.aacrjournals.org/content/amjncancer/20/2/295.full.pdf+html>^[26] (Accessed May 15, 2014).
5. Douglas, Gordon Watkins, and William E. Studdiford, Jr. "Major gynecological surgery in the aged patient." *American Journal of Obstetrics and Gynecology* 68 (1954): 456–65.
6. Douglas, Gordon Watkins, Lewis Thomas, Martin Carr, Niall Michael Cullen, and Robert Morris. "Trophoblast in the circulating blood during [pregnancy](#)^[5]." *American Journal of Obstetrics and Gynecology* 78 (1959): 960–73.
7. Douglas, Gordon Watkins, and Nicholson J. Eastman. "The immunologic role of the [placenta](#)^[14]." *Obstetrical & Gynecological Survey* 20 (1965): 442–51.
8. "Dr. William Studdiford Jr. Dies; Ex-Professor of Obstetrics, 66." *New York Times*, May 30, 1964.
9. Gluckman, Eliane, Hal E. Broxmeyer, Arleen D. Auerbach, Henry S. Friedman, Gordon W. Douglas, Agnès Devergie, Hélène Esperou, Damien Thierry, Gérard Socié, Pierre Lehn, Simon Cooper, Denis English, Joanne Kurtzberg, [Judith Bard](#)^[21], [Edward A. Boyse](#)^[22]. "Hematopoietic reconstitution in a patient with Fanconi's [anemia](#)^[18] by means of umbilical-cord blood from an HLA-identical sibling." *New England Journal of Medicine* 321 (1989): 1174–8.
10. "Gordon Watkins Douglas '42." *Princeton Alumni Weekly*, December 6, 2000. <http://paw.princeton.edu/memorials/37/54/index.xml>^[27] (Accessed May 15, 2014).
11. Leheldt, Hans. "The first five years of contraceptive service in a municipal hospital." *American Journal of Obstetrics and Gynecology* 93 (1965): 727.
12. Potter, Milton G., Jr., Claude E. Heaton, and Gordon Watkins Douglas. "Intrinsic fetal risk in breech delivery." *Obstetrics & Gynecology* 15 (1960): 158.
13. [Roe v. Wade](#)^[8], 410 U.S. 113 (1973). http://scholar.google.com/scholar_case?q=Roe+v.+Wade&hl=en&as_sdt=806&case=12334123945835207673&scilh=0^[28] (Accessed May 15, 2014).
14. Studdiford, William E., and Gordon Watkins Douglas. "Placental bacteremia: a significant finding in septic [abortion](#)^[7] accompanied by vascular collapse." *American Journal of Obstetrics and Gynecology* 71 (1956): 842.
15. Weiss, Gordon. "Gordon Watkins Douglas, M.D." *American Gynecological and Obstetrical Society*. <http://www.agosonline.org/member-pages-in-memoriam/douglas-gw-2000.html>^[29] (Accessed May 15, 2014).
16. Weseley, Alvin C., and Gordon Watkins Douglas. "Continuous use of chlorothiazide for prevention of toxemia of [pregnancy](#)^[5]." *Obstetrics & Gynecology* 19 (1962): 355–8.

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[New York University](#) ^[37] [Preeclampsia](#) ^[38] [Gynecology](#) ^[39]

Topic

[People](#) ^[40]

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- [1] <https://embryo.asu.edu/pages/gordon-watkins-douglas-1921-2000>
- [2] <https://embryo.asu.edu/keywords/noninvasive-prenatal-testing>
- [3] <https://embryo.asu.edu/keywords/fetal-cells>
- [4] <https://embryo.asu.edu/keywords/bellevue-hospital-center>
- [5] <https://embryo.asu.edu/search?text=pregnancy>
- [6] <https://embryo.asu.edu/search?text=contraception>
- [7] <https://embryo.asu.edu/search?text=abortion>
- [8] <https://embryo.asu.edu/search?text=Roe%20v.%20Wade>
- [9] <https://embryo.asu.edu/search?text=fetus>
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- [26] <http://cancerres.aacrjournals.org/content/amjcancer/20/2/295.full.pdf+html>
- [27] <http://paw.princeton.edu/memorials/37/54/index.xml>
- [28] http://scholar.google.com/scholar_case?q=Roe+v.+Wade&hl=en&as_sdt=806&case=12334123945835207673&scilh=0
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