

[Priscilla White \(1900–1989\)](#) ^[1]

By: Castagnetti, Blaise

Priscilla White studied the treatment of diabetes in mothers, pregnant women, and children during the twentieth century in the United States. White began working with children with Type 1 diabetes in 1924 at Elliott Proctor Joslin's practice in Boston, Massachusetts. Type 1 diabetes is an incurable disease where the pancreas produces little to no insulin. Insulin is a [hormone](#) ^[2] that allows the body to use sugar from food for energy and store sugars for future use. Joslin and White authored many publications on children and diabetes, in 1952, White helped Joslin found the Joslin Center. White noted that many of the children with whom she worked also had parents with the disease. Her research focused on diabetic pregnant women and female children with diabetes. White implemented the technique of delivering infants of diabetic women early, which increased the survival rate of diabetic women's infants.

White was born on 17 March 1900 in Boston, Massachusetts. Her father was an eye, ear, nose and throat specialist. When she was one year old, her parents divorced. In 1917, White graduated from Quincy High School in Quincy, Massachusetts. She then attended Radcliffe College in Cambridge, Massachusetts, where she studied liberal arts. At Radcliffe, White was a member of Phi Beta Kappa, the oldest honor society for liberal arts and sciences in the US. While at Radcliffe, White changed her academic direction away from the liberal arts and applied to medical school. During the early 1900s, many reputable medical schools, such as [Harvard University](#) ^[3] in Boston, Massachusetts, did not accept women. Despite that, White matriculated at Tufts University Medical School in Boston, Massachusetts. White was one of four women in her class.

During medical school, she worked at the Lahey Clinic in Burlington, Massachusetts. At the Lahey Clinic, White met her future mentor Elliot Proctor Joslin. Joslin was a physician, who specialized in diabetes. In 1923, White graduated from Tufts University Medical School third in her class of one hundred students. A year later in 1924, she moved to Boston from Burlington to continue her work with Joslin. Joslin recruited White to work at his diabetes clinic in Boston, Massachusetts. In 1934, Joslin's practice moved to the New England Deaconess Hospital in Boston, Massachusetts.

White helped Joslin write an article, which they published in the 1925 edition of the [Journal of the American Medical Association](#) ^[4], titled "The Growth, Prognosis, and Development of Diabetic Children." In the article, the White and Joslin sought to bring attention to diabetes and inspire medical professionals to begin discussions and research about the severity and prevalence of diabetes in the US. The article presented diabetes to the medical community so more physicians could research this disease in hopes of finding a treatment or cure.

After her first few years working at the Joslin's Diabetes Clinic, White wrote her own article, without any coauthors. In 1932, White published "Diabetes in Childhood and Adolescence" in the [Journal of the American Medical Association](#) ^[4]. In the article, White reported on a study of 750 diabetic children between 1898 and 1931. White found that control of diabetes in children enabled them to grow, develop, and live as normal people. By attending to each child as a specific case and testing their blood sugar levels, White found that blood sugar levels regulated through diet and exercise allowed children to live with the disease in a relatively normal way. That same year, in 1932, White along with Joslin founded the Clara Barton Birthplace Camp for Diabetic Girls in Oxford, Massachusetts. Joslin became the first medical director of the camp. The first year the camp opened there were only eight girls who attended. However, soon the camp became a huge success, and Joslin opened a similar camp for boys. However, it became a difficult to run both camps separately. In 1990, the camp directors made the decision to merge the two camps, and the camp became a co-ed camp. As of 2017, the camp is still operating, with an average of about 2,000 children enrolled each year.

White and Joslin tested the effectiveness of a new medication for diabetics. The medication, an early form of insulin, helped regulate sugar levels in the body. In 1936, White assisted physician Hans Christian Hagedorn from Copenhagen, Denmark with the development of protamine zinc insulin, or PZI, a long-lasting insulin used in the treatment of diabetes. It was essentially the addition of zinc to protamine insulin, an insulin already discovered and used widely. The zinc, when added, lowers the blood sugar for much more than 24 hours. Protamine insulin with no added zinc only lasts twelve to fourteen hours. This discovery of adding zinc to the protamine insulin significantly improved insulin treatment. PZI allowed the insulin to last longer in the body and regulate blood sugar for almost double the amount of time.

In the 1950s besides working at the Joslin Center, White was also an assistant professor at Harvard University Medical School in Boston, Massachusetts as well as Tufts University Medical School. In 1960, White was the first woman to receive the Banting Medal, the American Diabetes Association's highest award. The award named after Edward Banting, the first person to discover insulin and use it as a treatment for diabetes. In 1960, White gave the Banting Memorial lecture where she talked about juvenile diabetes, diabetes that occurs before the age of fifteen. Her close work with children at the Joslin Center and caring for pregnant diabetic women were the main motivations of her lecture.

In 1978, White published her classification of obstetric diabetes in the American Journal of Obstetrics and Gynecology. Obstetric diabetes, later called gestational diabetes, is diabetes that occurs in women when they become pregnant. White also invented the White classification, which first separated gestational diabetes in two categories: diet controlled, and medication controlled. The third category was diabetes that existed before pregnancy^[5], which was then further broken down into nine categories. It depended on age, duration, and other metabolic factors. This method is widely used to assess maternal and fetal risk. This classification makes it possible to distinguish between gestational diabetes and diabetes that occurs before pregnancy^[5].

White observed that many of the infants of diabetic mothers died when carried to term. In diabetic pregnant women, most stillbirths occurred in the thirty-fifth week or later of pregnancy^[5]. Infants born to diabetic mothers were typically larger compared to babies of non-diabetic mothers. White hypothesized that if these babies delivered a few weeks to a month before normal gestation^[6], they would be closer to a normal size. In addition, she hypothesized that an early delivery would prevent fetal stillbirth. White tested her hypothesis and the results were extremely successful. During her fifty years of work and research, White handled over 2,200 deliveries of diabetic women, and managed over 10,000 cases of juvenile diabetes. When she began working at the Joslin's Diabetic Center, the survival rate of a fetus^[7] born from a diabetic mother was fifty-four percent. By the time she retired in 1975, the survival rate had increased to ninety-seven percent. White achieved this using her technique of early delivery for diabetic pregnant women.

After White retired in 1975, she continued to work part-time helping young diabetics with the emotional struggles of living with diabetes. She never married, and retired to her home in Ashland, Massachusetts, with her housekeeper and five Dachshund dogs. On 16 December 1989, at eighty-nine years old, White died from a heart attack.

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their children. Her research focused on diabetic pregnant women and female children with diabetes. White implemented the technique of delivering infants of diabetic women early, which increased the survival rate of diabetic women's infants.

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