

Andrea: The Death of a Diabetic

by

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I had a sister who had diabetes. She died when she was 39. If she had lived a century ago, she would have been dead by the age of 14, shortly after we discovered she had the disease. Had she been born today, she probably would have lived a full life because gene therapy would soon be able to replace her defective genes.

My parents told me Andrea had diabetes right after she was diagnosed, when I was a freshman at Huntington Beach High School in California. I didn't know what to make of the news, except I figured it was serious. My parents' faces told me that. And later, I learned Andrea would have the disease forever and would be taking shots every day of her life so she could live. Then, I knew it was serious.

Somewhere along the way I learned that my grandmother, Cora, had diabetic symptoms when she was a young woman. She was able to control it by diet. Otherwise, she would have been dead because this was before the days of insulin.

When I was a sophomore, I had a teacher, Miss Simmons. She had black hair, and sharp features with an aquiline nose, and was very intense. She found out who in her social studies class planned to go to college and the three of us that dared to raise our hands were given special homework. We were to write a term paper, "Because that's what you do in college." Miss Simmons wanted us to be prepared. My mother, upon hearing of this anxiety-provoking assignment, immediately suggested I write my term paper on the topic of diabetes so I would better understand my sister's disease. I couldn't think of a good rejoinder, so I simply acquiesced.

A couple of times a week the three of us, Phil, Nancy, and I, were excused from the classroom grind and tramped off to the library to do our research. Days and weeks passed as we paged through encyclopedias, biographies, and thousands of pages of the *Reader's Guide to Periodical Literature*. (No Internet in those days.) I read Banting and Best's story of their discovery of insulin as they removed the pancreas from dogs, causing them to develop diabetes, and then "curing it" by injecting a solution of juices they had isolated from the pancreas. The hormone insulin was on its way to being discovered.

My file cards rapidly filled with the reports of arcane books and journal articles. I filled them out with an intensity born of the fear of meeting with Miss Simmons each Monday to review my progress. More cards meant more progress.

I learned about the Islets of Langerhans, named for a scientist who discovered microscopic islands of tissue embedded among the other cells of the pancreas dedicated to producing digestive enzymes to squirt into the small intestine. Langerhans didn't seem to have a clue as to why the islets were there, but Banting and Best thought they knew: the beta cells of the Islets were responsible for secreting insulin. This insulin was necessary so that the body cells could absorb the blood sugar that was part of every

meal. Without insulin, Andrea's cells would starve to death even though she had plenty of sugar in her blood. In fact, like other diabetics, she had so much that it spilled over into the urine and it could be measured there. Each day she would measure her sugar level and then inject insulin into her thigh, or else she would waste away.

My cards multiplied and I finally got to the point where I wrote my term paper. I don't remember the grade I got, but my father deserves some of the credit for he typed my hand written notes into the wee hours of the night before the paper was to be handed in. And if we are to believe recent genetic studies, he deserves some of the blame as well because juvenile diabetes is inherited.

Time passed with classes, graduation, and college. Andrea even followed me to Colorado College. After I had been there a couple of years, I was surprised to be joined by my sister, something to cramp any young man's style, even if I didn't have one. My dad said, "Look after Andrea." I did so with little enthusiasm. I said "Hi" to her on the rare occasions I saw her on campus and had quick conversations on the phone. We never talked about her health. I didn't want to. She didn't want to. What was there to say? Injections were not part of my life.

After Andrea's freshman year, she decided that Colorado wasn't the place for her. She returned home and went to the University of Southern California. I don't know how all of this came about except she was gone, and I had the distinct feeling that I had not done my job.

I think that USC was a good choice for her. She went to classes, parties, and maintained her California blonde good looks, graduated, married a lawyer-to-be, and helped him struggle through school, adopted a child because she had repeated miscarriages due to her diabetes, taught second grade, and got divorced—a typical American story except for the diabetes.

I heard from Andrea over the years, mostly by the obligatory Christmas cards or secondhand news via my mother. Andrea, along with the rest of my family, remained in California while I was moving about the country getting an education, as well as a wife and two children, only to settle on the opposite side of the country in Buffalo, New York. I would hear of Andrea's occasional misfortune when she misjudged her insulin doses and went into a coma and was hospitalized. But this news was always days after the event, only in time to feel glad she was ok.

One day I was startled to hear that Andrea was coming to Buffalo. I don't recall the excuse, but we were delighted to see her after many years of separation. We soon learned she was going blind. As she walked through our unfamiliar house, she was constantly touching the furniture and curtains not only for security, but I think to reassure herself of their reality and the texture of life.

She told us that only an operation would help her eyes—something about detached retinas. Her physicians didn't hold out much hope because of her lifelong treatment with insulin; although it had saved her life, it had also raised havoc with her circulatory system. Her eyes were only part of the problem; her entire cardiovascular system was compromised. The operation, in fact, would be dangerous.

My sister was adamant. She had tried going to classes designed to help patients who were going blind. My mother was being supportive by volunteering at an institute for the blind. To no avail, Andrea tried to deal with the fact of her inevitable blindness. She despaired and said she would rather be dead than blind. She was going forward with the operation, which would be in a couple of weeks.

Andrea died on the operating table at the age of 39. It was cardiac arrest, not an uncommon fate for diabetics whose cardiovascular systems were compromised.

She left an adopted three-year old daughter who went to live with her ex-husband who had remarried. He, with his lawyer's ire raised to fever pitch, threatened to sue the hospital for malpractice but never followed through.

Andrea had anticipated it all and had signed a waiver saying that she knew the dangers. And she had visited me to say goodbye—except I didn't know it.

Questions:

1. What are the symptoms of diabetes?
2. What are the different types of diabetes?
3. What is known about the genetics of diabetic disorders?
4. What goes wrong when juvenile diabetes sets in?
5. What is known about the role that insulin plays in the processing of blood sugar?
6. What are the various treatments for the different diabetic conditions?