



Women with diabetes face special challenges getting—and staying—pregnant. Experts agree that preconception planning can dramatically reduce the risks.

*By Hilda J. Brucker*

# HIGH RISK

At 23, April Roberts was ready to start a family. She mentioned her decision to her gynecologist during a routine annual exam, and began trying to conceive the following week when she knew she'd be ovulating. Then came the shocker: Her doctor phoned and urgently advised her to put all pregnancy plans on hold because of an abnormal result in her blood work. Subsequent blood tests revealed that April had type 1 diabetes—and that she was, in fact, already pregnant. Unfortunately, April had a miscarriage nearly immediately—a common occurrence when a pregnant woman's blood glucose levels are well above normal limits.

It took two years before April and her husband felt ready to try again. With blood sugar levels near normal, she was able to conceive, though the resulting pregnancy was considered high risk. "I was monitored heavily, heavily, heavily," she remembers. "I was on insulin and I had more sonograms and check-ups than the normal person has. But I had a healthy, nine-pound, seven-ounce baby boy."

Diabetes is not a threat to fertility in the usual way. It most likely won't prevent conception, unless the disease is way out of control. What happens instead is that high glucose levels in a woman's system can damage embryonic cells, causing early miscarriage. If a woman doesn't know she has diabetes, or she's managing her diabetes poorly, she's at risk for recurrent miscarriages. Her body may spontaneously abort the developing embryo just days after conception,

before a period has even been missed, leading some women with diabetes to believe they're having trouble conceiving. "That's a fairly common thing, that many women can be having miscarriages without knowing they've had one. High blood sugar impairs the ability of the fetus to implant in the uterus," explains Robert Rizza, M.D., professor of endocrinology at the Mayo Clinic College of Medicine in Rochester, Minnesota, and president of the American Diabetes Association.

## what goes wrong

More than 200,000 new cases of diabetes are diagnosed in the U.S. each year among women and men age 20 to 39—and roughly one-third of those who have diabetes don't know it. It's estimated that 2.4 percent of Americans age 20 to 39 have the disease. In the past, most women of childbearing age had type 1 diabetes, previously known as juvenile diabetes since it's usually diagnosed in childhood. In type 1, the immune system malfunctions, causing it to destroy the insulin-producing cells of the pancreas. Since the body produces no insulin at all, women must use injections to control blood sugar levels.

Now, more and more younger people are being told they have type 2 diabetes, which used to appear mostly in middle age and is related to lifestyle factors like diet and exercise. "The epidemic of obesity is leading to more cases in women in their twenties and thirties," says Dr. Rizza. As

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women have delayed childbearing and the weight of the population has increased, physicians are reporting more mothers-to-be with the disease.

With type 2 diabetes, the pancreas does produce some insulin. However, it's either not enough, or the body is unable to use it properly, so glucose builds up in the blood. It's usually treated with oral medications and dietary changes, though a type 2 woman who wants to conceive will very likely be switched from pills to insulin and kept on it throughout pregnancy. “There is currently no data on the safety of any oral agent used in pre-existing type 2 diabetes during pregnancy,” says Florence Brown, M.D., an endocrinologist at the Joslin Diabetes Center of Harvard Medical School.

Miscarriage rates among women with poorly controlled diabetes can be as high as 30 to 60 percent during that crucial first trimester. The risk of birth defects is also high, and also stems from uncontrolled blood sugar levels around the time of conception. “Women don't know they are pregnant until about six weeks after their last menstrual period; by that time, many of the [baby's] organs are already formed,” explains Dr. Brown.

## preconception planning

To help prevent miscarriage and diabetes-related birth defects, women with the disease should make preconception planning a high priority. Celia Dominguez, M.D., a reproductive endocrinologist with Emory University School of Medicine in Atlanta, stresses that a woman should maintain tight glycemic (blood sugar) control for three to six months before she even goes off contraceptives and attempts to conceive. “Our belief is longer is better,” she says, explaining that the blood test doctors rely on to gauge the overall level of glycemic control (known as the hemoglobin A1C or hbA1C) provides a three-month average of blood sugar levels. The basic finger-stick test can tell a woman that her blood glucose level is normal at the time the test is taken, but the hbA1C may reveal that sugar levels have been fluctuating wildly over the past two or three months—meaning conception is a risky prospect until levels are better controlled.

Ideally, a woman should work with her endocrinologist or internist along with an obstetrician familiar with high-risk pregnancies, says Dr. Rizza. A dietitian and diabetes

educator can also provide vital pre-pregnancy advice. But it's not just up to the medical pros; self-management is all-important.

When Katie Clark discussed pregnancy with her endocrinologist, he told her she'd have to get her hbA1C below 6.5 before she should try to conceive. The normal range for hbA1C is between 4 and 6 percent; people with diabetes are usually urged to get the number below 7. But because studies have repeatedly shown that higher glycemic levels can increase miscarriage and birth defects, doctors increasingly advocate even tighter control for pregnant women. Reaching that level can be difficult.

“To start, I went from checking blood sugar levels three or four times per day to eight to 10 times per day,” says Katie. “I had to start weighing food. . .but try as hard as I could, my numbers were still all over the place.” After a year of hard work, she finally got her hbA1C below 6.5 for six months, and her doctor gave her the green light to get pregnant. Katie gave birth to baby Ellie in July of 2000; little sister Anna came just 21 months later.

Women who've been diagnosed with diabetes know that they have to take special care before conceiving and throughout pregnancy. But any woman with risk factors for the disease—excess weight, family history, or past history of metabolic problems—should be checked before getting pregnant. Happily, medicine has come a long way since the days when women with diabetes were routinely advised to forget about having children at all. “I think in general, that once you're well managed, if you keep the blood sugars normal, a woman does just fine,” says Dr. Rizza. ❁

