

## **Diabetes and infertility**

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Infertility is the inability of a couple to achieve a pregnancy in a twelve month period in the presence of adequate unprotected sexual intercourse of at least three times a week. Diabetes can affect fertility in both men and women.

In the event that pregnancy is achieved, poor blood sugar control can lead to frequent miscarriages as high blood sugar levels are toxic to the developing foetus. Diagnosed and undiagnosed diabetes is a known cause of infertility in both men and women; hence all men and women being investigated for infertility should have their blood sugar level tested.

How does diabetes then lead to inability to achieve a pregnancy in men and women? Diabetes has a significant effect on male reproductive function. In men with diabetes, impaired delivery of sperm from the penis into the vagina may be a cause of infertility.

Instances seen in men with diabetes includes erectile dysfunction in which the penis is not hard enough for penetration and hence delivery of sperm into the upper part of the vagina. A condition called retrograde ejaculation seen in men with diabetes can also lead to inability to impregnate a woman. In this case, during ejaculation instead of the semen to be released into the vagina it is pushed inside the man's bladder because of the damage to the nerves controlling the neck of the bladder by diabetes. The man thus notices that little or no semen comes out during ejaculation. This condition is treatable with very simple drugs that are widely available. If these drugs are found to be unhelpful, assisted reproduction methods can be undertaken.

The quality of the sperm produced is another factor responsible for a man with diabetes being unable to impregnate a woman. A year 2007 scientific report from Queen's University in Belfast showed that poor control of diabetes with subsequent high blood sugar levels may affect the quality of sperm by damaging the genetic material inside them. Fertilization of the female egg by this damaged sperm leads to low implantation rates and high rates of miscarriage. The research also showed that men with diabetes released lower volume of semen during ejaculation.

It is also thought that men and women with Type 1 Diabetes in which the body produces antibodies against itself may also have reduced fertility from antibodies that attack the sperm cell and the female eggs. People with diabetes have reduced functioning of their immune system and are thus susceptible to becoming infected with tuberculosis. When this tuberculosis affects the genital tract it can lead to infertility due to inflammation and blockage of the tube that carry semen in men while in women it can affect the uterus leading to blockage of its cavity. The tubes may also be blocked.

In women with diabetes who have an underlying condition called polycystic ovarian syndrome, there is



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increased production of testosterone which eventually affects egg maturation in the ovaries. Also, the reduced sensitivity of their body to insulin also leads to problems with the ability to ovulate with subsequent irregular periods, development of fluid filled cavities in their ovaries called cysts and thus reduced likelihood of achieving a pregnancy. If this resistance to the action of insulin is controlled through exercise, diet and drugs like metformin which improve insulin sensitivity, such women becomes more fertile. Once pregnancy is achieved, keeping the blood sugar level within normal increases the chance of carrying the pregnancy successfully. Uncontrolled blood sugar level apart from increasing the risk of a miscarriage can also lead to premature delivery and birth defects. It can also lead to very big babies with consequent birth difficulties and injuries to both mother and baby.

It is advised that the man or woman with diabetes who is planning a pregnancy or has had difficulty achieving or carrying a pregnancy attend what is called a preconception clinic where they would see either a Gynaecologist, Urologist or Diabetologist as the case requires. At such clinic visits the need and the means by which to achieve good blood sugar control will be discussed. Women with diabetes, especially those poorly controlled who become pregnant have an increased risk of giving birth to a baby with birth defects.

<http://www.sunnewsonline.com/webpages/features/goodhealth/2010/jan/24/Diabetes-corner-24-01-2010.htm>