

Diabetes and reproductive health

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What is diabetes?

Diabetes is a condition in which there is too much glucose (a sugar that is the body's main source of energy) in the blood. If undetected or not controlled, diabetes can cause complications both in the short term (including increased risk of infections) and long term (see below).

Diabetes develops when the pancreas, the gland that makes insulin, is either unable to make insulin or the insulin does not work properly. Without enough insulin (a hormone that lowers glucose levels in the blood) blood glucose levels rise and lead to health problems.

What are the different types of diabetes?

There are two main types of diabetes. Type 1 diabetes can begin at any age but often starts in childhood or young adulthood. A person with type 1 diabetes cannot make enough insulin and must have insulin every day to live.

About 85 per cent of people with diabetes have type 2 diabetes, which is linked to diet, lack of exercise, obesity and family history. A person with type 2 diabetes does not produce enough insulin to control their blood glucose levels.

Can diabetes be prevented?

Type 1 diabetes cannot be prevented. However, type 2 diabetes may be prevented by a healthy lifestyle including regular physical activity, a healthy diet and keeping weight in the healthy range.

Visit the Diabetes Australia website (www.diabetesaustralia.com.au) for more general information about diabetes and its treatment.

What health problems are caused by diabetes?

If undetected or poorly controlled, diabetes can lead to a shorter life. Diabetes can cause blindness, kidney failure, nerve damage, reduced blood circulation that may lead to lower limb amputation, and can increase the chance of cardiovascular disease (heart attack and stroke). Men with diabetes also have a higher chance of developing sexual

and reproductive health problems including:

- erectile dysfunction
- androgen (or testosterone) deficiency
- low libido (sexual desire)
- retrograde ejaculation (semen flows back into the bladder)
- balanitis (inflammation of the head of the penis).

Diabetes and erectile dysfunction

What is erectile dysfunction?

Erectile dysfunction (ED) is when a man is unable to get and/or keep an erection that allows sexual activity with penetration. It is not a disease, but a symptom of some other problem, either physical or psychological or a mixture of both.

How common is erectile dysfunction in men with diabetes?

Up to four in every five men with diabetes may eventually experience ED, and they are twice as likely to have erectile problems as men without diabetes.

Age increases the chance of getting both ED and diabetes. ED is more common in men with established cardiovascular disease and those with high blood pressure and high cholesterol (common conditions in people with diabetes), obesity and in those who are smokers.

How does diabetes cause ED?

Diabetes can cause erectile problems by:

- reducing blood flow to the penis or by affecting the function of blood vessels in the penis, making it more difficult for a man to get and/or keep an erection
- damaging the nerves in the penis
- lowering the levels of testosterone (the male sex hormone).

Can ED be prevented in men with diabetes?

Erectile problems are more likely to happen when blood glucose levels are poorly controlled. Keeping blood glucose and blood lipids (cholesterol and triglycerides) normal is important to prevent nerve and blood vessel damage to the penis. Not smoking and drinking less alcohol may also help prevent erectile problems.

How is ED treated in men with diabetes?

It is important to first manage the diabetes and any other linked conditions, such as high blood pressure. Once diabetes is properly controlled, the first treatment for erectile problems is usually an oral medicine (PDE5 inhibitors) such as Viagra®, Cialis® or Levitra®. The tablets work in about half of men with diabetes.

If oral medicines do not work well, other treatments can be used, including vacuum devices, penis injections and surgery.

Diabetes and androgen deficiency

What is androgen (or testosterone) deficiency?

Testosterone is the most important androgen (male sex hormone) in men and it is needed for normal reproductive and sexual function.

Androgen, or testosterone, deficiency is when the body is not able to make enough testosterone for the body to function normally.

How common is androgen deficiency in men with diabetes?

About one in three men with type 2 diabetes have low serum testosterone levels. Men with type 2 diabetes are more likely to have low testosterone levels if they are also obese. Similarly, diabetes seems to be more common in men with low testosterone, especially if they are obese.

What are the symptoms of androgen deficiency?

Low energy levels, mood swings, irritability, poor concentration, reduced muscle strength and low sex drive may be symptoms of androgen deficiency (low testosterone). Symptoms often overlap with those of other illnesses. The symptoms of androgen deficiency are different for men of different ages.

How does diabetes cause androgen deficiency?

Luteinizing hormone (LH) in the brain is needed for the testes to make testosterone.

High blood glucose levels in men with diabetes can lower the amount of LH released, and less testosterone may be made. Obesity, which is often linked with type 2 diabetes, may also lead to low testosterone levels.

Can androgen deficiency be prevented in men with diabetes?

Keeping a healthy weight and regular exercise to control blood glucose levels may keep testosterone levels normal.

How is androgen deficiency treated in men with diabetes?

Men with diabetes and androgen deficiency should get treatment for the diabetes and any other illnesses first, as this may return testosterone levels to normal. Weight loss in overweight or obese men may help. For men with diabetes and low testosterone levels caused by genetic disorders or other conditions, testosterone therapy may be prescribed.

A large Australian study (T4DM) is underway to see if testosterone treatment, in addition to a diet and exercise program, can prevent diabetes in obese men with pre-diabetes (www.t4dm.org.au).

Diabetes and low libido

What is low libido?

Low libido is the term used to describe a lack of interest in sexual activity. Sexual desire, or libido is produced by a combination of biological, personal and relationship factors.

Sexual desire is different for each person and may change over time depending on what is happening in a person's life, and low libido may not be seen as a problem for some men. However, if a man loses interest in sex for no apparent reason, and it is a concern for him, talking to a doctor may be helpful.

How can diabetes cause low libido?

Low testosterone levels in men with diabetes

can cause low libido. In men with diabetes and erectile problems, the psychological effect of sexual dysfunction may lower their interest in sexual activity.

How is low libido treated in men with diabetes?

Controlling blood glucose levels may help to improve feelings of sexual desire. Men who have low libido due to androgen deficiency may need testosterone therapy. It is important that a doctor checks for any other underlying physical or psychological causes. Counselling can be helpful in identifying and addressing any psychological or relationship issues that affect sexual desire.

Diabetes and retrograde ejaculation

What is retrograde ejaculation?

In men with retrograde ejaculation, the muscle at the opening of the bladder, which usually stops semen from entering the bladder during orgasm, does not close normally. When the muscle does not close properly semen flows back into the bladder. Therefore little or no semen is discharged from the penis during ejaculation, and the first urination after sex looks cloudy as the semen mixes with the urine. Retrograde ejaculation is uncommon and usually harmless.

How does diabetes cause retrograde ejaculation?

Retrograde ejaculation in men with diabetes may be caused by nerve damage to the muscle (external sphincter muscle) that opens and closes the bladder neck. High levels of blood glucose can damage the nerve and muscles of the sphincter.

How is retrograde ejaculation treated in men with diabetes?

If retrograde ejaculation is caused by diabetes, controlling blood glucose levels and making lifestyle changes may help. Most men do not need treatment. However,

it is difficult for men with retrograde ejaculation to have a baby naturally. If trying to conceive, couples may need assisted reproductive technologies such as IVF.

Diabetes and balanitis

What is balanitis?

Balanitis is a common inflammation of the glans penis (head of the penis) that can affect males at any age.

What are the symptoms of balanitis?

Men with balanitis may not be able to pull back their foreskin, or have itchiness, rash, redness or swelling, or discharge from the penis.

How can diabetes cause balanitis?

After urinating, some urine can get trapped under the foreskin. In men with diabetes, the moist area and the glucose in the urine can lead to bacteria growing and then infection (balanitis). One of the groups of medicines (SGLT-2 inhibitors) used to treat diabetes may also increase the risk of balanitis.

How is balanitis treated in men with diabetes?

Antibiotics or antifungal medication may help clear up the infection. Washing the penis and the inside of the foreskin with soap and warm water may help. It is also important to speak to your doctor about controlling blood glucose levels.

When should I get help about diabetes and reproductive health problems?

Speaking to a doctor about sexual and reproductive health problems is important for all men, and particularly for those who have diabetes. Your doctor can also check for any other serious health conditions and talk about lifestyle changes or other ways to control your blood glucose levels. Your local doctor may refer you to a specialist or sexual therapist if needed.

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