

# Erectile dysfunction

Erectile dysfunction (ED) is the inability to get and maintain an erection that is sufficient for satisfactory sexual intercourse. ED is also known as impotence. There are many potential causes of ED, both physical and psychological; however, 80% of cases are due to physical causes. ED increases with age. It is estimated that half of all men between the ages of 40 to 70 have some degree of ED while an estimated 70% of men over 70 have the problem.

ED is often an early sign that blood vessels are narrowing. This can happen because they are clogged with fatty substances, such as cholesterol. As the blood vessels in the penis are a lot smaller than the blood vessels elsewhere in the body, they are often affected first. Having narrowed blood vessels is a risk factor for coronary heart disease (blocked coronary arteries), stroke, and heart attack. Having ED is often considered an early warning sign for cardiovascular disease as it often develops before larger blood vessels such as coronary arteries get clogged. A large international study found that men with ED are twice as likely to have a heart attack, 10% more likely to have a stroke and 20% more likely to be admitted to hospital with heart failure.

## Causes

### Physical causes

The main physical causes of ED can be classified into 5 main categories:

- **Vascular** – problems with the flow of blood to the penis
- **neuropathic** – problems with the nerve supply to the penis
- **hormonal** - conditions that affect hormone levels
- **anatomical** - conditions that affect the physical structure of the penis
- **Prescription medication** (see later in this article) and some illegal drugs such as cannabis, cocaine or heroin can cause ED.

Tiredness and excessive alcohol intake are another two possible causes. Most physical causes of ED will not affect libido (sex drive) apart from hormonal causes.

### Vascular conditions

Examples of vascular conditions that can cause ED include:

- cardiovascular disease which can be caused by atherosclerosis (hardening of the arteries) which can lead to blockage of blood vessels. This is the cause of 70% of cases of ED.
- high blood pressure
- diabetes can affect both the blood supply and the nerve endings in the penis, so it is also a neuropathic condition. Diabetes (both type 1 and 2) is one of the most common causes of ED.

## Neuropathic conditions

Examples of neuropathic conditions that can cause ED include:

- multiple sclerosis - a condition in which the nerves of the central nervous system degenerate, thus affecting the body's actions and activities, such as movement and balance
- Parkinson's disease - a disorder of the brain caused by an imbalance of dopamine, a hormone needed to control muscle movement. It occurs when nerve cells in the brain needed to make dopamine are slowly destroyed leading to tremors and difficulty with walking, movement and coordination
- Spinal injury or disorder
- tumours
- a stroke

## Hormonal conditions

Examples of hormonal conditions that can cause ED include:

- hypogonadism - a condition that leads to low levels of the male sex hormone, testosterone
- an overactive thyroid gland (hyperthyroidism)
- an underactive thyroid gland (hypothyroidism)
- Cushing's syndrome - increase in the level of glucocorticoid in the body

## Anatomical conditions

These are a rarer cause of ED and may include:

- **Peyronie's disease** - a condition that affects the tissue of the penis
- **Hypospadias** – a birth defect where the urethra (the tube that carries urine from the bladder to the tip of the penis) develops abnormally

## Medication that can cause ED

Certain medicines can cause ED, including:

- **diuretics** - medicines that increase the production of urine, mainly used to treat high blood pressure, heart failure and kidney disease
- **antihypertensives** such as beta-blockers that are used to treat high blood pressure
- **fibrates** are used to lower cholesterol levels (rarely used these days as statins are the most effective treatment for cholesterol)
- **antipsychotics** are used to treat some mental health conditions, such as schizophrenia and bi-polar disorder (eg) Risperidone
- **antidepressants**
- **corticosteroids** such as prednisolone are used to control inflammatory conditions such as rheumatoid arthritis, inflammatory bowel disease and bronchitis.
- **anticonvulsants** are used to treat epilepsy
- **antihistamines** are used to treat allergic conditions such as hay fever (modern antihistamines do not cause this problem)
- **anti-androgens** are used to suppresses male sex hormones
- **cytotoxics** are chemotherapy medication used to kill cancer cells

It must be noted that ED is a very rare side effect of most of these medicines and most people do not suffer this symptom.

## Psychological causes

Psychological causes can include depression and anxiety. Some emotional issues may also affect the physical ability to get or maintain an erection. These include relationship problems, past sexual problems or abuse and being in a new relationship. Counseling may be beneficial if the underlying cause of erectile dysfunction is psychological.

## Lifestyle changes that reduce erectile dysfunction

Research just published (as I discussed in last week's Westmeath Topic) has proven that erectile dysfunction is a strong marker for future heart disease. There are lifestyle changes that can reduce the risk of cardiovascular disease and erectile dysfunction as well as improve the symptoms of ED if you suffer from it already. The single most important risk factor is smoking. Smokers in their 30s and 40s are five times more likely to have a heart attack than non-smokers and ED is more common in smokers. Other factors that reduce the risk of heart disease and ED include regular exercise (equivalent to brisk walking for 3 hours or more per week) and maintaining a healthy weight. Making healthier food choices with reduction in consumption of saturated fat and salt and increased consumption of oily fish and fruit and vegetables is recommended. Moderation of alcohol intake (to less than 2 units per day in females and 3 units per day in males) reduces cardiovascular risk.

## Erectile Dysfunction is a marker for heart disease

Research just published has proven that erectile dysfunction is a strong marker for future heart disease. This means that for men suffering from erectile dysfunction, it is even more important than first thought to get a diagnosis from your doctor. The "Princeton Consensus" study found that all men over 30 with ED are at risk of cardiovascular disease. The study found that younger men who experienced ED were twice as likely to suffer cardiovascular disease than men without ED. The risk factors for erectile dysfunction and cardiovascular disease can be easily treated by lifestyle changes, advice from your doctor and pharmacist, in some cases medication may be needed.

# Treatment

If ED is caused by an underlying health problem such as heart disease or diabetes, the first phase of treatment is to treat that condition first. In some cases this resolves the problem of ED. Lifestyle changes such as stopping smoking, losing weight if overweight, moderating alcohol consumption, exercising regularly and reducing stress can help.

## Phosphodiesterase-5 (PDE-5) inhibitors

The best known of these drugs is Viagra<sup>®</sup> as it was the first of this class of drugs to be released and was considered a wonder drug when released in 2008. Phosphodiesterase-5 (PDE-5) inhibitors in general are one of the most widely used and effective types of medication for treating ED.

They work by temporally increasing the blood flow to the penis.

Three PDE-5 inhibitors available on prescription are sildenafil (Viagra<sup>®</sup>), tadalafil (Cialis<sup>®</sup>) and vardenafil (Levitra<sup>®</sup>)

Sildenafil and vardenafil work for about eight hours and they are designed to work "on demand". The tablet needs to be taken 30 minutes to an hour before sexual activity with the effects lasting up to eight hours later. Tadalafil lasts for up to 36 hours and is more suitable if treatment is required for a longer period of time, for example, over a weekend.

PDE-5 inhibitors work better when taken on an empty stomach. They should not be used by those suffering from certain heart conditions. About 70% of men report having improved erections after taking PDE-5 inhibitors. These medications are triggered by sexual stimulation, so sexual arousal is needed for the medication work. Side effects may include headaches, flushing, indigestion, nausea or vomiting, a blocked or runny nose, muscle pain and visual disturbances.

A maximum of four PDE-5 inhibitors only are allowed on the medical card, long term illness or drug payment schemes per month. If you require more than four a month, the HSE will not pay for the extra tablets so you must pay for any extra yourself. If PDE-5 inhibitors cannot be used (for example, a person has coronary heart disease) there are some other treatment options

## **Vacuum pumps**

A vacuum pump is also called a penis pump. It is a cylinder that is fitted over the penis, with a manual or battery operated pump to create suction. This creates a vacuum that causes the blood to fill into the penis, making it erect. This creates and maintains an erection for around 30 minutes. They have a 90% success rate.

## **Alprostadil**

Alprostadil is a synthetic hormone that stimulates blood flow to the penis. It is most commonly administered as an injection directly into the penis. Alprostadil will usually produce an erection after five to 15 minutes. It is generally only used if a person can not tolerate PDE-5 inhibitors. Because of the inconvenience of having to inject it, it is rarely used.

## **Surgery**

Surgery for ED is usually only recommended if all other treatment methods have failed. Penile implants are a type of surgery used for ED.

**Disclaimer: Please ensure you consult with your healthcare professional before making any changes recommended**

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