

Women and stroke

Anyone can have a stroke and it can happen suddenly no matter what age you are. This factsheet explains the general risk factors for stroke as well as the specific ones that only affect women. It also lists further sources of information and support.

A stroke happens when there is a problem with the blood supply to the brain. It can happen because of a **blockage** in one of the arteries to the brain (an ischaemic stroke) or it can happen because of **bleeding** in or around the brain (called a haemorrhagic stroke). Most strokes (about 80 per cent) are caused by a blockage. The most common cause of this blockage is a blood clot.

A **transient ischaemic attack** (TIA) is often called a mini-stroke. The symptoms are the same as those of a full-blown stroke, but they do not last as long (usually from a few minutes to 24 hours). A TIA can often be a warning sign that you are at risk of a full-blown stroke.

Symptoms

The FAST test (right) can help you to recognise the symptoms of a stroke or TIA. These symptoms usually come on suddenly. Other symptoms include sudden weakness or numbness on one side of the body, sudden confusion, dizziness or unsteadiness.

Facial weakness

Can the person smile?
Has their mouth or eye drooped?

Arm weakness

Can the person raise both arms?

Speech problems

Can the person speak clearly and understand what you say?

Time to call 999

A stroke is a medical emergency.

If you see any one of these signs, seek immediate medical attention.

There are various risk factors that increase the chances of having a stroke or TIA for men and women. These are the main ones:

Risk factors we can't change, such as:

- a family history of stroke
- ethnic background – people of South Asian or African-Caribbean background are at a higher risk of stroke

- your age – the risk of stroke increases as we get older.

Medical conditions, such as:

- high blood pressure
- high cholesterol
- diabetes
- atrial fibrillation (a type of irregular heart beat).

Lifestyle factors, such as:

- smoking
- eating an unhealthy diet
- lack of exercise
- regularly drinking more than the recommended levels of alcohol.

Please contact us for more information about any of the medical conditions listed above and for information about the positive changes you can make to your lifestyle to reduce your risk.

There are also some smaller risk factors for stroke that are specific to women. Although generally **the risk of stroke for young women is very low**, the following can increase your risk if you're a woman under 65:

- taking contraceptives containing hormones
- pregnancy
- using hormone replacement therapy

(HRT)

- having migraines.

The results of a study in 2007 showed that **women between the ages of 45 and 54 had a higher risk of having a stroke than men within the same age group**. The reasons for this are unclear, although it was concluded that the risk factors for stroke such as raised blood pressure, high cholesterol levels and being overweight, may not be so closely observed and controlled in women in this age group.

A recent research study in England found that **the risk of ischaemic stroke** (caused by a blockage) is **more likely to be inherited by women** than by men. People with a family history of stroke who had experienced a stroke, were two to three times more likely to be female than male, according to the study, although the reasons for this remain unclear.

The effects of hormones

Hormones are chemicals made by the glands in the body. They travel in the bloodstream to your tissues and organs and have many functions, for example they can affect your mood, reproduction, growth and development.

The relationship between the female sex hormones, **oestrogen** and **progesterone**, and stroke is not completely clear.

Oestrogen may protect against stroke because of the way it affects **cholesterol**. (For further information on cholesterol, please see our factsheet *F8, Healthy eating and stroke*.)

However, oestrogen can also increase the likelihood of the blood clotting and this may increase your risk of stroke.

Taking medication such as the contraceptive pill, and conditions such as pregnancy affect hormone levels and so may increase your risk of stroke.

Hormones in contraception

The combined oral **contraceptive pill** can be used to prevent pregnancy, and also to treat menstrual problems such as heavy or irregular periods. It contains both oestrogen and progestogen (artificial versions of oestrogen and progesterone that are naturally produced by the body). There are different types of pill available in different strengths.

The **contraceptive patch** contains similar hormones to the pill, but it is worn as a patch on your skin, rather than taken as medication. Both the pill and the patch carry similar risks for stroke.

The contraceptive pill and patch carry a small risk of serious problems such as heart attacks, stroke and deep vein thrombosis (DVT). This is because they can **increase the risk of blood clots forming**.

A large analysis of research studies found that there was an increased risk of stroke associated with taking the contraceptive pill, although pills that contained smaller amounts of oestrogen were associated with less risk.

The risk of stroke and other complications, if you are taking the contraceptive pill or patch, are higher if you have other risk factors. So they should be used with caution

if you have any of the risks listed below. They should not normally be used at all if two or more of the following apply:

- you are a smoker, or you have stopped smoking less than one year ago
- you have high blood pressure
- you are over 35 years old
- you have a family member who has had a blood clot under the age of 45
- you are overweight
- you have had a blood clot or stroke in the past
- you have diabetes
- you have migraines (you should avoid taking the pill if you suffer from regular or severe migraines, particularly if you get a warning sign or aura before the attack)
- you can't move around easily (for example if you are in a wheelchair, or recovering from an operation).

Generally, the risk of stroke due to using contraceptives containing hormones is low. If you are concerned about your use of contraception and the risk of stroke, **talk to your GP** and do not stop using it without consulting them first.

Other methods of contraception containing hormones

The **intrauterine system (IUS)** is a plastic T-shaped device that is implanted into your womb. It releases the hormone progestogen, which is similar to the natural

hormone progesterone. The **contraceptive implant** is a small tube that is implanted under the skin in the upper arm. It works by slowly releasing the hormone progesterone into your body and provides long-term hormonal contraception.

Although these contraceptive methods do not increase the risk of stroke, they may not be suitable for you if you have already had a heart attack or stroke.

Talk to your GP or a nurse at your doctor's surgery about the different contraceptive options that are available, and what is suitable for you.

Hormone replacement therapy (HRT)

When women get older the ovaries produce less and less of the hormones oestrogen and progesterone. Both hormones have important roles in the body. When the levels of oestrogen and progesterone drop it can cause a variety of physical and emotional changes for a woman.

Hormone replacement therapy (HRT) is a treatment that is used to replace the hormones that your body has stopped producing because of the menopause. **HRT helps to control some of the symptoms of the menopause**, such as hot flushes, vaginal dryness and mood swings.

Taking HRT is thought to carry few risks for healthy women, but as with taking any medication or hormone therapy, there may be some health risks involved. HRT **slightly increases your risk of stroke**, because it increases the risk of blood clots forming, and it can increase your blood pressure.

A review of 28 research studies found that HRT was associated with an increased risk of strokes caused by a blockage (ischaemic strokes). Women taking HRT were also more likely to have severe strokes, according to the review.

Most experts agree that if HRT is used in the short term (less than five years), the benefits outweigh the risks. If you are taking HRT and you are concerned about your risk of stroke, **talk to your GP**. If you have already had a stroke, it is advisable to see a **menopause specialist** who can advise on whether HRT is suitable for you or not. Your GP can refer you to see one.

Stroke and pregnancy

During pregnancy, the **levels of female hormones rise**, causing changes in the blood vessels and the make-up of the blood. During pregnancy your blood pressure can also rise. These changes can increase your risk of stroke.

Pregnant women are 13 times more likely to have a stroke than non-pregnant women of the same age. However the risk of stroke in young women is small and strokes caused by pregnancy and childbirth are rare. It has been estimated that a stroke during pregnancy affects eight out of every 100,000 women.

Strokes that happen during pregnancy are evenly divided between both types of stroke: those caused by a bleed (haemorrhagic) and those caused by a blockage (ischaemic).

Research has shown that the risk of stroke is increased in the last three months of pregnancy and in the six weeks following birth. If you are pregnant and have **existing**

high blood pressure or symptoms of blood vessel disease you should be closely monitored during your pregnancy. Strokes that happen during pregnancy should be treated in the same way as any other stroke.

The risk of another stroke occurring in future pregnancies is unknown. It is thought to be a very low risk and it is likely to depend on the exact cause of your first stroke.

Other complications

In the early stages of pregnancy, your blood pressure can be lower than usual. In the final stages of pregnancy, blood pressure rises back up to the usual levels. However if blood pressure rises beyond normal levels this may be associated with **pre-eclampsia**.

Pre-eclampsia occurs in five to eight per cent of all pregnancies. It is characterised by high blood pressure, waste products collecting in the blood (rather than being excreted in urine), and important proteins in the blood 'leaking' into the urine.

Pre-eclampsia is a serious complication of pregnancy and occurs when there is a problem with the placenta. The placenta connects the mother's blood supply to the baby's. The placenta needs an efficient blood supply to nourish the unborn child and pre-eclampsia occurs when this need is not met.

If you have pre-eclampsia you may experience symptoms such as headaches, abdominal pain, visual disturbances such as oversensitivity to light, blurred vision, or seeing flashing spots, shortness of breath, nausea and vomiting, confusion or anxiety.

If pre-eclampsia progresses, it can increase your risk of stroke.

Treatment for pre-eclampsia will usually include medication to treat your high blood pressure and both you and your baby will be closely monitored.

Diabetes during pregnancy

During pregnancy your hormone levels change and this can affect how your body processes sugar (glucose). In the early stages of pregnancy your glucose levels may drop slightly. However in the later stages of pregnancy these levels may increase and you may be unable to produce enough insulin (a hormone) to process the sugar properly.

This condition is known as **gestational diabetes** and usually stops after giving birth. However it may increase your risk of developing diabetes later in life. Gestational diabetes develops in about one to three per cent of women, and it is more common if you are overweight or from certain ethnic groups – women from South Asian, Black Caribbean and Middle Eastern descent are more at risk of developing gestational diabetes.

Diabetes increases your risk of stroke as it can damage the blood vessels and lead to hardening and narrowing of the artery walls.

If you have diabetes it is important to keep your blood sugar at the right level. You may be referred to a dietitian, as blood sugar levels can often be controlled with changes to your diet and lifestyle. If your blood sugar levels cannot be controlled in this way, you may need to take medication or insulin to help with this. For further information, please see our factsheet *F15, Diabetes and stroke*.

Migraine

Migraine is a complex condition with a variety of symptoms. For most people the main symptom is a severe, throbbing **headache** affecting the front or one side of your head. This is usually accompanied by other symptoms such as nausea, vomiting, or a sensitivity to light, sound or smell.

There are two types of migraine, **migraine with aura** (affecting 10 to 30 per cent of migraine sufferers) and **migraine without aura** (affecting the majority of people with migraine). The aura usually happens at the start of a migraine attack, before the headache. It often includes visual changes such as seeing flashing lights or dark patches, but changes in sensation or a difficulty speaking can also be part of the aura.

Migraine affects around 15 per cent of the population. During their reproductive years women are approximately three times more likely to experience migraine than men of the same age. It is thought that this is because **female hormones** are closely linked to the cause of migraine in women. Many women report having a migraine attack around the time of their period and this is known as a '**menstrual migraine**'. Roughly one in seven women who suffer with migraines only have them at the time of their period.

Many women also find that their migraines may get worse as they approach the **menopause**. This may be because oestrogen levels drop around this time. It could also be because hormone replacement therapy (HRT) used to treat menopause can trigger migraines.

Recent studies show that **migraine with**

aura doubles the risk of a stroke caused by a blockage. This risk is higher in women than in men. The risk is also higher for people under 45, those who smoke and women who take the oral contraceptive pill.

Whilst this research may seem frightening, it is important to put the findings in context. Your risk of stroke, if you are a younger adult, is likely to be very low, even if you have migraine with aura. **Stroke is rare in younger people**, who are less likely to be affected by other factors, like furring up of the arteries.

Research has also shown that the risk of a stroke caused by bleeding in the brain (haemorrhagic stroke) might be higher in women aged under 45 years who have migraine with aura. However, more research is needed to confirm this.

For further information about migraine, please see our factsheet *F28, Migraine and stroke*.

Useful organisations

All organisations are UK wide unless otherwise stated.

Stroke Association

Stroke Helpline: 0303 3033 100

Website: stroke.org.uk

Email: info@stroke.org.uk

Contact us for information about stroke, emotional support and details of local services and support groups.

Action on Pre-eclampsia (APEC)

Tel: 020 8427 4217

Email: info@apec.org.uk

Website: www.apec.org.uk

Set up to raise awareness, and to ease

physical or emotional suffering caused by this disorder. Runs a helpline, a telephone befriending service, an online support group, and publishes leaflets on pre-eclampsia.

Diabetes UK

Diabetes Careline: 0845 120 2960

Email: info@diabetes.org.uk

Website: www.diabetes.org.uk

Information and support for all people with diabetes.

Family Planning Association (FPA) England, Scotland and Wales

Tel: 0845 122 8690

Northern Ireland: 0845 122 8687

Website: www.fpa.org.uk

Provides information on the different options for contraception.

Menopause Support

Tel: 01392 876 122

Email: info@menopausesupport.org.uk

Website:

www.menopausesupport.org.uk

This is a support network that aims to help women deal with problems they might experience while going through the menopause. The website offers support, advice, products and workshops that may help.

Menopause Matters

Website: www.menopausematters.co.uk

An independent clinician-led website that aims to provide accessible, up-to-date information about the menopause, menopausal symptoms and treatment options.

The Migraine Trust

Helpline: 020 7631 6970

Email: info@migrainetrust.org

Website: www.migrainetrust.org

Leading patient support and research charity for migraine. Can provide details of specialist migraine clinics.

Migraine Action

Tel: 0116 275 8317

Website: www.migraine.org.uk

Membership organisation providing information and advice about all aspects of migraine.

Women's Health Concern (WHC)

Tel: 0845 123 2319

Website:

www.womens-health-concern.org

A charity aiming to provide unbiased, accurate health information. Runs a telephone helpline and email enquiry service provided by a team of nurses. Publishes a range of factsheets and leaflets on women's health issues.

Disclaimer: The Stroke Association provides the details of other organisations for information only. Inclusion in this factsheet does not constitute a recommendation or endorsement.

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For sources used, visit stroke.org.uk

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