Patient Information

BRAIN ANEURYSMS

(Including screening for familial aneurysms)
What is a cerebral aneurysm?

An aneurysm is formed when there is a weakness in the blood vessel causing a ballooning or ‘out-pouching’ that fills with blood.

Most aneurysms are small and in a position in the brain where they are not likely to cause symptoms nor a risk of bleeding and so can be monitored through scans. Due to their size or position, some aneurysms carry a risk of bleeding over a lifetime. The risk depends on the size, shape and position.

Rarely aneurysms can cause pressure on nerves or surrounding brain causing symptoms.

In the UK approximately 3% of people have brain aneurysms. They are more common in women than men and more common in adults.

The risk of subarachnoid haemorrhage from an aneurysm in the UK is approximately 7:100,000 for those with sporadic aneurysms (i.e. NOT familial).

How are aneurysms caused?

Aneurysms are caused through weakness in the artery wall. This may be due to lifestyle choices for example to smoking, excessive alcohol or rarely amphetamine use.

Alternatively, they can be caused by untreated high blood pressure or certain genetic conditions such as adult polycystic kidney disease, sickle cell anaemia or connective tissue disorders, for example Ehlers Danlos type 4, Marfan’s or neurofibromatosis.
The risk of someone with adult polycystic kidney disease having a brain aneurysm is 10-13% although they only account for less than 1% of subarachnoid haemorrhages.

In some cases, aneurysms run in families. This may be due to a genetic predisposition or family lifestyle choices.

It is also true that some people who have none of the above get aneurysms.

**Types of aneurysm?**

Aneurysms are classified by their shape and size.

A berry (or saccular) aneurysm is rounded.

A fusiform aneurysm is a dilation or widening.

Small aneurysms are 1-4mm in size

Medium aneurysms 5-11mm

Large aneurysms 11-24mm

Giant aneurysms 25mm or more.
Familial aneurysms

- Familial aneurysms are those where two or more first degree blood relatives have had a brain haemorrhage from an aneurysm or have incidental aneurysms.
- First degree relatives are your parents, children and brothers/sisters.
- Familial aneurysms are more likely to burst at a smaller size and develop at a younger age than those that aren't and so it is more likely treatment will be offered if one is found.
- People with familial aneurysms are more likely to have more than one aneurysm.
- Familial aneurysms affect females as much as males whereas sporadic aneurysms are more likely to affect females.
- If one first degree relative has a brain aneurysm, then the risk of you having an aneurysm is about 4% which is only just above the average and so screening isn't generally offered.
- If two first degree relatives have an aneurysm, then the risk for you having an aneurysm is 8%
- Because the risk of a subarachnoid haemorrhage from an aneurysm is higher for people who have aneurysms and 2 first degree relatives screening will be offered.
- Studies have shown more than 80% of people who have intracranial aneurysms have smoked cigarettes at some stage of their life. It is true that not all people who have smoked develop aneurysms, but it may be that smoking increases an individual who is more genetically susceptible to develop aneurysms.
Screening for familial aneurysms:

Screening will be considered for those people who have two first line relatives or a strong family history.

You should ask your doctor to refer you to your local neurosurgical unit to request an appointment with a neurovascular consultant.

You will need to speak to them so that you understand the implications of screening.

Screening will take into account your family history, age and general wellness. It will also take into account any conditions that would make you more susceptible to aneurysms such as a connective tissue disorder or adult polycystic kidney disease.

The doctors will also consider your specific preferences and the psychological impact of finding an aneurysm.

You should understand that not all aneurysms can be treated due to their size, shape or location and you would need to be able to live with this fact.

Finding a brain aneurysm will also have an impact on life and holiday insurance as well as ability to apply for a mortgage and so you would have to consider this before screening.

Another consideration is that other abnormalities may be found following a brain scan. These abnormalities may or may not be serious, but again may have an impact on your life.

Studies have shown that finding an aneurysm can have a detrimental effect on many people’s quality of life, self-esteem and future outlook. This also happens in those who have screening and don’t find an aneurysm to a lesser extent.

You must also know that not finding an aneurysm, although uncommon, doesn’t guarantee that you won’t develop one or have a brain haemorrhage.
Screening:
Screening is usually done through a CT angiogram or MR angiogram (MRI scan). These can both reliably detect aneurysms. A CT scan is quicker but an MR scan doesn’t contain ionising radiation.

Why treat a cerebral aneurysm?
The reason to treat a cerebral aneurysm is to prevent it from bleeding.

The decision to treat a cerebral aneurysm is made by your neurosurgeon and interventional radiologist in a multidisciplinary team (MDT) meeting. The experts take into account your well-being and personal wishes but will ultimately recommend the type of treatment or management that is safest for you.

Treatment depends on the size, shape and position of the aneurysm which can influence the risk of it bleeding over your lifetime. It also takes into account your wishes and your general well-being including your fitness and other illnesses that may make the risk of treatment including general anaesthetic too high.

Choices include endovascular, surgical treatment or watching.

Endovascular treatment:
This is an endovascular treatment which means it is performed through a blood vessel by a consultant interventional neuroradiologist. It is carried out whilst you are asleep under general anaesthetic.

A catheter (tube) is inserted into an artery in your groin in the same way as an angiogram. The catheter is fed up to the aneurysm using x-ray screening. Coils, stents or other devices are used to seal the aneurysm and close it off to the blood
stream. The size, shape, and position of the aneurysm will determine which treatment is considered.

**Surgical clipping:**

Clipping for cerebral aneurysm is an effective procedure to permanently close it and prevent bleeding. A small metal clip (or clips) is placed over the neck of the aneurysm to prevent blood entering it.

This is done through a craniotomy. A craniotomy is an operation to open the head in order to expose the brain. The neurosurgeon goes through the hole made to the brain in order to locate the aneurysm. A small clip will be placed over the neck of the aneurysm to seal it and the bone will be placed back to the skull using small plates. The operation will be carried out whilst you are ‘asleep’ under general anaesthetic which means you will not be aware or feel anything.

**Conservative management:**

This will only be considered if the risk of treatment is higher than watching due to the size, shape or position or you have a number of health problems that would make the procedure more difficult.

You will normally be offered a further scan in order to watch the aneurysm. If it changes then treatment will be considered

**Once a decision is made and discussed with you by your medical team; with your agreement you will be placed on the waiting list for treatment.**
Lifestyle:

If you have been considered for screening, lifestyle is important. You should not smoke and must keep blood pressure under control.

You can keep your cardiovascular system healthy by regular exercise, keeping cholesterol under control and keeping alcohol within government guidelines.

Illegal drugs:

You should not take illegal amphetamines such as cocaine.

Smoking:

You are strongly advised not to smoke with a brain aneurysm. This is the biggest risk factor in formation and rupture of aneurysms. Smoking cessation clinics are linked to every G.P. Practice or you can ask for help during your stay in hospital. An advice number is printed at the end of this leaflet.

Alcohol:

Alcohol is safe within the recommended government guidelines.

Binge drinking isn’t advised as this is a risk factor for formation and bursting of aneurysms

Hormone replacement and contraception:

Speak to your consultant or nurse if you are considering taking contraceptive pills. Your GP may advise other contraception, such a coil.
Hormone replacement therapy is considered on an individual basis and depends on other risk factors. Please speak to your GP, neurosurgeon or specialist nurse if you are considering this.

**Pregnancy:**

You would not be prevented from becoming pregnant although if you have treatment planned, it is advisable to postpone pregnancy until afterwards.

If you do have an aneurysm and become pregnant your obstetrician may want to speak to your neurosurgeon for guidance. It is advisable to keep blood pressure closely monitored and not prolong the second stage of labour.

**Exercise:**

You can exercise if you have a brain aneurysm but would advise against extreme, excessive exercise that may push blood pressure up for a long period of time.

**Sex:**

You can have sex if you have a brain aneurysm.

If you have any questions regarding any of the above topics or wish to discuss in further detail, please contact the neurovascular nurse team on 0151 556 3325. This is an answerphone, but we always contact you back if you leave a name and phone number.
Useful Contact details

NHS 111: 111
Telephone advice if you need urgent medical help fast but it is not a 999 emergency (or you do not have a GP)
Website: http://www.nhs.uk and search ‘emergency and urgent care’

D.V.L.A. Driver Vehicle Licensing Authority,
Drivers Medical Group, DVLA, Swansea, SA99 1DL.
Medical Enquiries: 0800 032 5202
www.dvla.gov.uk

The Brain Charity: 0151 298 2999.
www.thebraincharity.org.uk
Offers practical help, emotional support and social activities for people with neurological injury. And their families/carers

Brain Haemorrhage Support Group:
bhsupport.org.uk or through Facebook.

Epilepsy Action: 0808 800 5050
www.epilepsyaction.org.uk
Offers practical help for people who have seizures

Brain and Spine foundation: 0808 808 1000
www.brainandspine.org.uk

NHS Free smoking helpline: 0800 0224 332
www.nhs.uk/smokefree
England: 0300 123 1044 Wales: 0800 085 2219

Advice on Alcohol: www.drinkaware.co.uk or www.drinkingandyou.com
Walton Centre Contact Details

For any emergency see your G.P or go to your local Accident and Emergency Department

*For information regarding appointments or DVLA contact your consultant’s secretary*

Patient Experience Team provides a PALS service.

0151 556 3090

**Neurovascular Nurse Specialists:** (answerphone)

0151 556 3325.

Walton Centre switchboard - 0151 525 3611