

# Glossary of terms

**Aneurysm:** A weak bulging area in an artery wall.

**Angiogram:** A study showing arteries and veins by injecting contrast dye through a catheter and taking pictures using x-ray.

**Balloon:** An inflation device intended to temporarily block flow in a vessel and protect the artery adjacent to an aneurysm.

**Catheter:** A thin flexible tube for insertion into a blood vessel through which devices can be introduced or contrast dye can be injected.

**Cerebral Angiogram:** A study showing arteries and veins in the brain by injecting contrast through a catheter and taking pictures using x-ray.

**Coiling:** Placing coils in an aneurysm to remove the aneurysm from circulation and prevent rupture.

**Coils:** Small platinum coils used to occlude (fill) aneurysms. Coils are attached to a wire which is fed through a catheter and into the aneurysm.

**Craniotomy:** Surgical procedure where a section of skull is temporarily removed.

**Embolisation:** Blockage of a blood vessel or aneurysm so blood can no longer flow through.

**Endovascular:** Within the vascular system (arteries and veins).

**Interventional Neuroradiologist (INR):** A doctor specifically trained to treat vascular diseases in the brain using minimally invasive endovascular techniques.

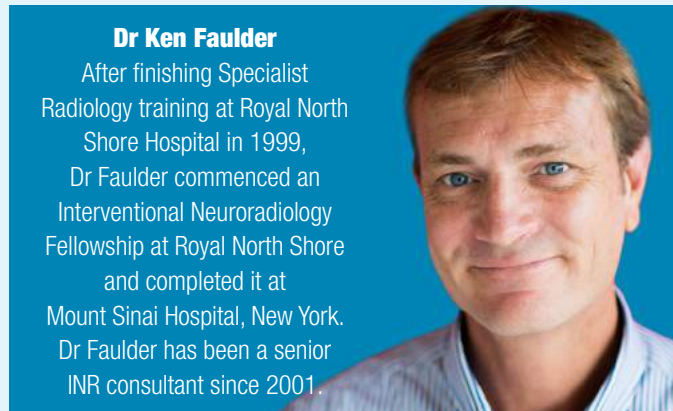
**Stent:** A cylindrical device made of metal wire that is left in an artery adjacent to a wide necked aneurysm to prevent coils leaving the aneurysm.

**Subarachnoid Haemorrhage (SAH):** Bleeding into the compartment surrounding the brain, often caused by the rupture of a cerebral aneurysm.



## Dr Brendan Steinfert

After finishing training as a Specialist Radiologist at Royal North Shore Hospital in 2004, Dr Steinfert undertook two Interventional Neuroradiology Fellowships, initially at Royal North Shore Hospital and secondly at The National Hospital of Neurology and Neurosurgery, Queens Square, London. Dr Steinfert has been a clinical consultant since 2006.



## Dr Ken Faulder

After finishing Specialist Radiology training at Royal North Shore Hospital in 1999, Dr Faulder commenced an Interventional Neuroradiology Fellowship at Royal North Shore and completed it at Mount Sinai Hospital, New York. Dr Faulder has been a senior INR consultant since 2001.

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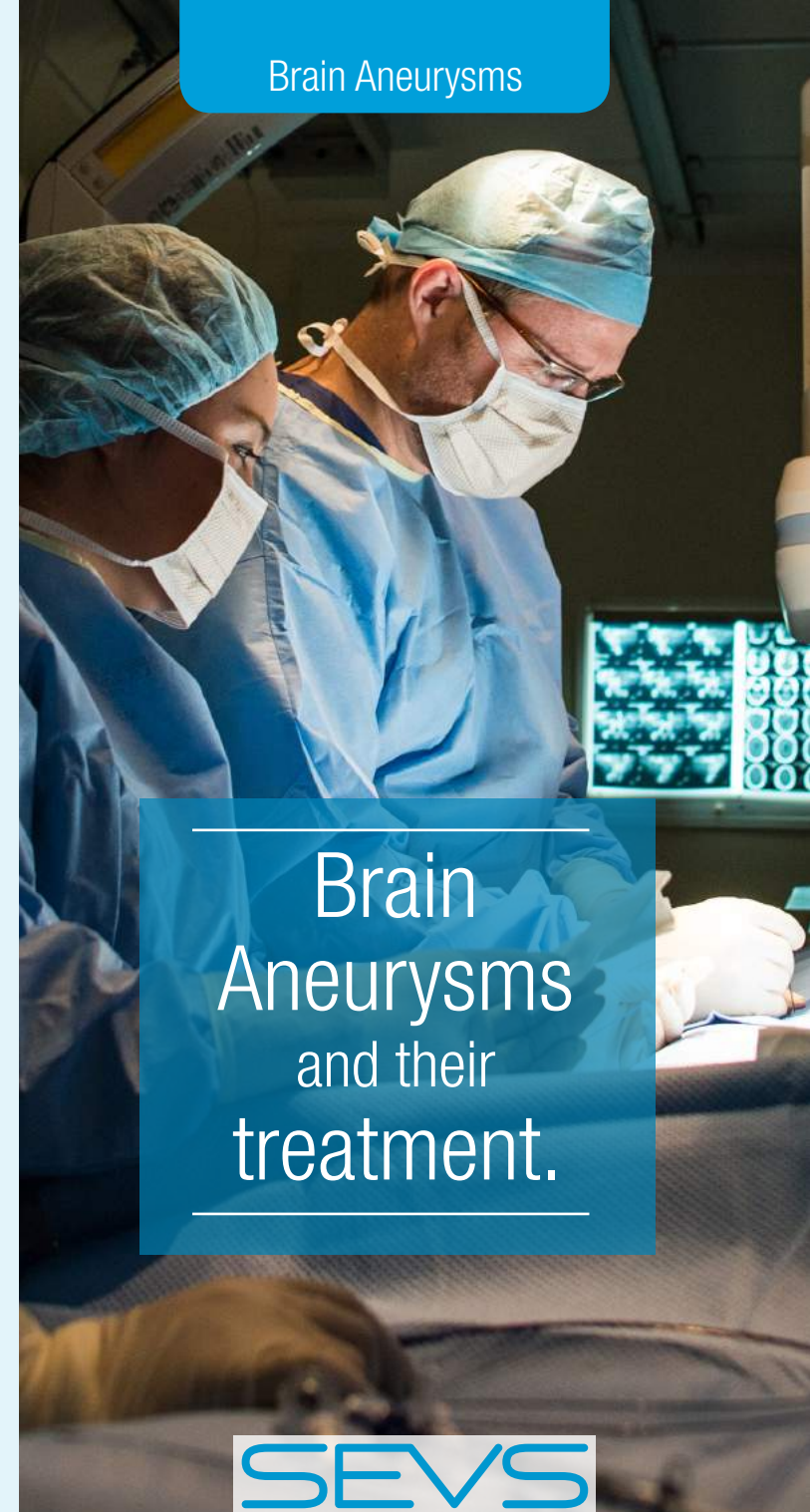
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Brain Aneurysms



# Brain Aneurysms and their treatment.

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# What is a Brain Aneurysm?

A brain aneurysm is a localised bulging of an artery in the brain due to weakness in the vessel wall.

Brain aneurysms often only become symptomatic when they rupture and cause bleeding around and into the brain, known as a subarachnoid haemorrhage.

## How is a brain aneurysm treated?

Until the early 1990's, the standard treatment of brain aneurysms was open neurosurgery entailing a craniotomy, brain retraction, careful dissection to expose the aneurysm, and placement of one or more metallic clips across the aneurysm neck to stop flow in the aneurysm.

Since then, coil embolisation or endovascular coiling has rapidly evolved to become an alternative to surgery in many cases.

By placing small, soft, platinum coils within the aneurysm via a small tube or catheter introduced from the groin, open surgery can be avoided and recovery time significantly reduced.

Although not all aneurysms are suitable for endovascular treatment, newer adjunctive techniques including balloon assisted coiling and stent placement has permitted an ever increasing range of aneurysms to be treated without the need for open surgery.

## Ruptured aneurysms

Brain aneurysm rupture is associated with a high morbidity and mortality. Brain aneurysms are a common cause of sudden death.

Of those surviving the initial haemorrhage, rebleeding occurs in 50% of patients within 6 months (usually within the first two weeks) if the aneurysm is left untreated.

## Unruptured aneurysms

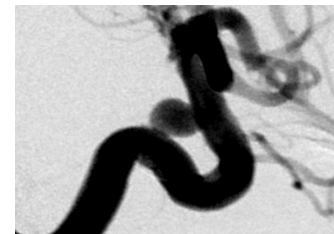
The treatment of unruptured brain aneurysms is less time-critical and must be weighed against the estimated likelihood of future aneurysm rupture. This takes into account the patient's age, co-morbidities and the procedural risk associated with aneurysm treatment.

## About your treatment

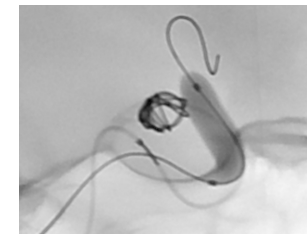
Coil embolisation, often referred to as "coiling" of aneurysms, is performed under general anaesthesia and typically takes 3 to 4 hours.



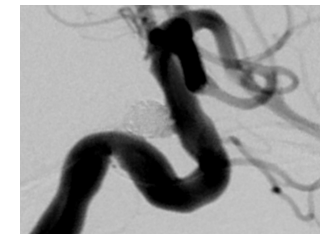
3D of aneurysm



Aneurysm before operation



During operation



After operation



For unruptured aneurysms patients typically spend one night in ICU followed by 1 to 2 days on the ward after an elective coiling.

## After Coiling

On discharge, strenuous activity should be avoided for a week as well as driving. Usually we recommend 2 to 3 days recovery post discharge before returning to light duties.

For a ruptured aneurysm, recovery varies from person to person. It may take significantly longer to return to normal activity due to bleeding around the brain.

## Follow-up

Routine MRI or cerebral angiography after endovascular treatment is scheduled at regular intervals. The first follow-up is usually performed 6 months after treatment at which time the need and frequency of additional follow up is assessed.

If aneurysm recurrence is detected, further coil embolisation or surgery can be offered as appropriate.

## About your treatment

Before treatment a neurovascular specialist will discuss the risks and benefits of each treatment option and recommend the best for you.