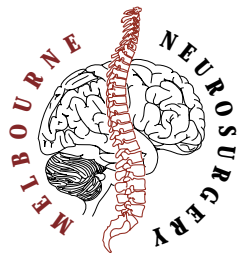


## INFORMATION LEAFLET

# CEREBRAL ANEURYSM



### WHAT IS A CEREBRAL ANEURYSM ?

A Cerebral Aneurysm is an abnormality in the wall of one of the blood vessels in the brain. The blood pushes on the wall of the blood vessel and produces a swelling that looks like a small balloon. These mostly occur around the base of the brain and occur where the vessels branch.



### WHO GETS CEREBRAL ANEURYSMS ?

They occur spontaneously at a rate of about 1 in 10,000 people. They can occur in families (inherited) but this is uncommon. Because the aneurysm forms from the wall of the blood vessel over time they are very uncommon in children and more common in adults.

### HOW DO THEY PRESENT ?

They are found for lots of reasons:

The commonest reason is because they bleed. This is called a Subarachnoid Haemorrhage (see leaflet on SUBARACHNOID HAEMORRHAGE). The blood vessels run in a space around the brain called the subarachnoid space which is filled with the fluid (C.S.F) that bathes the brain. The vessel leaks in to this (hence the term).

They can push onto structures in or around the brain to produce things like; double vision, headaches, pain in the face, visual disturbance.

They can produce mini strokes. In large aneurysms clot may form inside and some can break off and travel into a small vessel and occlude it.

They may have been found by accident when you had a test for something else.

They may have been found because we were looking for it as you had a family history of cerebral aneurysms.

### WHAT CONDITIONS ARE ASSOCIATED WITH CEREBRAL ANEURYSMS

Polycystic kidneys  
Type IV Ehlers Danlos syndrome  
Familial Intracranial Aneurysm Syndrome

### WHAT TEST ARE REQUIRED ?

This depends on what you plan to do if you find an aneurysm and what risks you wish to take.

As a general rule if you are looking for an aneurysm that is thought to have bled then you should have an angiogram. If we are screening you for an aneurysm it depends on what is available and what you can have. The normal options for screening are either a M.R.I.(M.R.A) or a C.T.A.

### WHAT ARE THE BEST TESTS ?

This depends partly on the experience of the centre performing the test. But all being equal.

#### CEREBRAL ANGIOGRAM

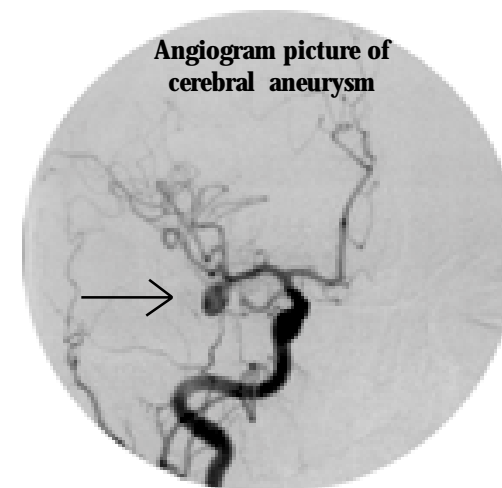
Definitely the best test. Is regarded as the gold standard. It involves the arterial injection of contrast. It has the highest chance of finding the aneurysm but also has the highest risks. The risk of permanent stroke is about 0.5 - 1%.

#### MAGNETIC RESONANCE ANGIOGRAM

This and CTA are the usual methods of screening. If the aneurysm is less than 5mm then it may not be easily seen. Locates 70-90% of aneurysms. Use a large magnet.

#### C.T.A.(COMPUTERISED [C.T.] ANGIOGRAM)

Similar to above. Uses Injection of iodine contrast and probably more sensitive than above. Depends very much on centre doing the test. Useful in those who have had an aneurysm clipped previously.



Angiogram picture of  
cerebral aneurysm

## WHAT DO YOU NEED TO KNOW ABOUT YOUR CEREBRAL ANEURYSM ?

### CAN THEY BLEED AND WHAT ARE THE RISKS?

Yes. There is much debate about what the actual risk is. It is felt to be about 0.5% - 1% per year for asymptomatic aneurysms. The determining factors seem to be:

- (i) If you have had an aneurysm that has bled in the past then the risk of any other aneurysms that you have bleeding is higher than if you have never had a bleed.
- (ii) If you are from a family that has a history of aneurysms then your risk of bleeding is higher than if you have no family history.
- (iii) The bigger the aneurysm the bigger the risk. It is felt that if the aneurysm is less than 7-10mm the risk of bleeding is low but over this they start to bleed and should be treated.
- (iv) Patients with polycystic kidney disease and aneurysms have a high risk of bleeding.
- (v) If the aneurysms are causing symptoms then they have a greater risk of bleeding.

### CAN ANYTHING MAKE THEM BLEED.

Smoking and raised blood pressure are associated with an increased risk of rupture.

### CAN THEY BE MULTIPLE?

Yes In about 20% you will have multiple aneurysms and this is more common with middle cerebral aneurysms.

### CAN YOU GET MORE?

Yes If you have had an aneurysm that ruptured and this is treated successfully then you have a 2% chance of developing a new aneurysm per year. This means that you will need to be followed up. If you belong to the above group of multiple aneurysms then it is felt the risk of new aneurysm formation is even higher.

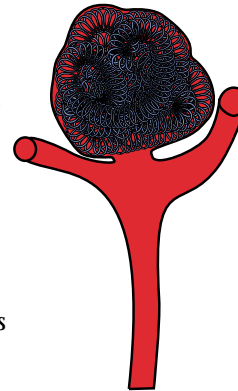
## IF I HAVE AN ANEURYSM WHICH OF MY RELATIVES SHOULD BE SCREENED AND WHEN ?

This probably is only necessary if you have the familial aneurysm syndrome which means that you have 2 relatives up to third degree who have a known aneurysm. But it is known that the risk is higher if you have only one first degree family member with an aneurysm. Hence we would offer screening to all first degree relatives.

## WHAT ARE THE TREATMENT OPTIONS ? (And how successful are they?)

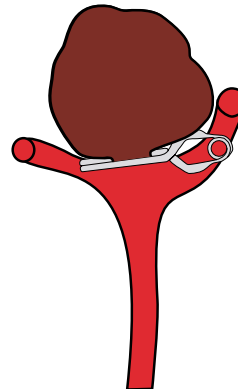
### Coiling

This involves the insertion of multiple coils into the aneurysm via an angiogram type approach to effectively pack the aneurysm and cause the blood in it to clot. It has a lower complication rate(3.7%) than clipping but the chance of complete obliteration is only 54%. It is likely that as this technique gets better this will improve. The rebleeding rate is not yet fully known.



### Clipping

The death and complication rate is dependent on many factors but is up to 7% for death and 15% for complications. These figures have become significantly better over the last few years. The surgical complications depend on factors such as: aneurysm size, aneurysm location, age of patient, if the aneurysm has bled or not. Risk of recurrence is about 1.5% in a properly clipped aneurysm over 4-5 years.



## IS TREATMENT ALWAYS NEEDED ?

You have to weigh up the risks of leaving an aneurysm alone (and having it bleed) and the risk of any treatment proposed. This is best discussed on an individual basis with your surgeon.

## IF YOU NEED TREATMENT WHAT WILL IT BE ?

This depends on you, your aneurysm location/shape and your surgeon. Some aneurysms are not able to have a coil because we cannot get to them or the shape is such that they have an open neck that will allow the coils to fall out. Others are easier coiled than clipped because of location.

## FOR ABOVE PROCEDURES SEE THE RELEVANT PROCEDURE LEAFLET

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