

Subarachnoid Haemorrhage

a guide for patients and carers



Brain & Spine
Foundation

The Brain and Spine Foundation provides support and information on all aspects of neurological conditions. Our publications are designed as guides for people affected by brain and spine conditions – patients, their families and carers. We aim to reduce uncertainty and anxiety by providing clear, concise, accurate and helpful information, and by answering commonly asked questions. Any medical information is evidence-based and accounts for current best practice guidelines and standards of care.

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Introduction

This booklet provides information on subarachnoid haemorrhage (SAH). It provides information on the acute stage of SAH, describing the condition, what happens in hospital, tests and investigations, and possible treatments. It also provides information on recovery from SAH, common symptoms and feelings, and returning to everyday life. Sources of further support and information are listed in the Useful Contacts section. References are available on request.

Common questions

What is a SAH?

A subarachnoid haemorrhage (SAH) is a sudden leak of blood over the surface of the brain. The brain is covered by layers of membranes, one of which is called the arachnoid. An SAH occurs beneath this layer. The blood vessels supplying the blood to the brain lie in this space, surrounded by clear cerebrospinal fluid. SAH is a medical emergency and is a serious, life-threatening condition. If it is suspected that you, or someone in your care, has suffered a SAH you must dial 999 immediately and ask for an ambulance.

What causes SAH?

1. Aneurysm- a small, balloon-like swelling on an artery
2. Arteriovenous Malformation (AVM) – an abnormal knot of vessels
3. Idiopathic – no abnormality identified

In many cases, there is a weakness in the wall of one of the blood vessels supplying the blood to the brain. The resulting balloon-like swelling is called an aneurysm. The haemorrhage occurs when the aneurysm wall bursts due to the pressure of the blood as it is pumped through the brain. When this happens, blood escapes into the surrounding brain tissue.

Aneurysms can also occur in blood vessels in other parts of the body but there is no link between these aneurysms and brain aneurysms. We do not fully understand why aneurysms develop, but there is a greater risk of them occurring in people with high blood

Common questions

pressure, people who smoke, and people who have excessive alcohol consumption. A family history of the condition may increase your risk. They also become more common as people get older. There is no established link between aneurysms and stress.

Subarachnoid bleeding may also be caused by a severe head injury. This is called a “traumatic SAH”.

Haemorrhage: the escape of blood from a ruptured blood vessel

Cerebrospinal fluid (CSF): the clear, watery fluid that surrounds and protects the brain and spinal cord

Aneurysm: a balloon-like swelling in the wall of an artery

Could I have prevented it?

People who smoke, people with high blood pressure and people who consume excessive amounts of alcohol have a greater risk of developing aneurysms, but will not necessarily do so. Aneurysms can occur in people without these known risk factors.

Are there warning signs?

Rarely, an aneurysm can press on a particular part of the brain and symptoms might develop as a result. However, usually, aneurysms go undetected and there are no symptoms until they burst.

Why me?

In most cases, there is no way of identifying the people who are at risk. There is a slight hereditary factor: a very small number of people can inherit from their family a greater risk of having an aneurysm. Slightly

more women are affected than men and they are most common in people aged between 45 and 70.

Are my family at risk?

In some families there may be a slightly increased risk. If more than one person in the family has had a subarachnoid haemorrhage or is known to have a brain aneurysm then some members of your family may be advised to have an MRA scan (see page 8) to check for possible aneurysms.

The people advised to have scans would be adults of first line relatives – parents, brothers and sisters.

Why now?

There is no reason why the haemorrhage occurs on one day rather than another. The bleed often, though not always, happens at a time of physical effort like coughing, going to the toilet, heavy lifting, straining, or during sex.

What are the symptoms?

Most people have a sudden, severe headache, often at the back of the head, followed by vomiting (being sick). The headache usually persists and people tend to describe it as the worst headache they have ever had. It is common to have a stiff neck. People might also slur their speech, experience a disturbance in their vision, have sensitivity to light, or have physical problems like weakness in an arm or leg.

In more severe cases, people can collapse and lose consciousness. Some people might also have a seizure (a “fit”).

Symptoms:

- **Sudden, severe headache – the pain is often described as similar to being hit on the head suddenly, resulting in intense and severe pain**
- **Nausea and vomiting (feeling and being sick)**
- **Stiff neck**
- **Slurred speech**
- **Visual problems**
- **Physical problems**
- **Loss of consciousness**
- **Seizure/convulsions**
- **Sensitivity to light**
- **Confusion**
- **Weakness on one side of the body**

What happens in hospital?

Most people are admitted to their local hospital where the haemorrhage is confirmed by a **CT scan** of the brain. You might also have a sample of fluid taken from your spine (**lumbar puncture**).

You will then usually be admitted to a regional centre and seen by a neurosurgeon who has particular expertise in dealing with SAHs. You will be admitted for further investigations which could include a CTA scan, an angiogram, a CT scan, an MRI scan and/or an MRA scan.

Tests and investigations

CT scan

This is a special type of X-ray which takes pictures of the brain from different angles.



During the test you will be asked to lie on a scanner table while the scanner rotates around your head. It is a quick and painless examination.

The scan can help to make the diagnosis of subarachnoid haemorrhage and show the location of the haemorrhage, and any problems it might be causing. (Sometimes a dye is injected to show the blood vessel that might be the source of the bleeding.)

Lumbar puncture

The brain and spinal cord, which extends from the brain down through the centre of your spine, are surrounded by a clear liquid called cerebrospinal fluid (CSF). If there is bleeding into the subarachnoid space following a subarachnoid haemorrhage (the space that surrounds the brain and the spinal cord), there will be blood in the cerebrospinal fluid.

A lumbar puncture involves taking a sample of this fluid. A needle is passed between two vertebrae (spinal bones) at the lower end of the spine (the lumbar area) into the space containing the CSF. A small amount is drawn off in a syringe and sent to a laboratory for examination. This test may also be used to confirm the diagnosis of a subarachnoid haemorrhage.

CTA scan

This is a special type of CT scan involving an injection of dye into the back of the hand, which highlights blood vessels and can identify aneurysms.

Angiogram

An angiogram is an X-ray test used to produce pictures of blood vessels. A cerebral angiogram shows the blood vessels in your head and neck.

After you have had a local anaesthetic to numb the groin area, a very small, flexible tube (catheter) is inserted into the blood vessel in your groin (the femoral artery). This is passed through other blood vessels in your body until it reaches your neck. You will not feel it moving inside you.

The tube will be positioned into different blood vessels in the neck.

While this happens, you will receive injections of a special dye (called contrast agent) so that your blood vessels show up under X-ray. The injections might give you a general warm feeling, but this goes away quickly.

Before taking the first picture, the equipment around you will be moved into position. More dye is injected for further pictures.

It is very important that you remain still throughout the procedure to ensure the pictures taken are as clear as possible.

MRA scan

MRA stands for magnetic resonance angiography. This scan gives a view of specific blood vessels (arteries and veins). MRA may be included with an MRI scan.

MRI scan

MRI stands for magnetic resonance imaging. This uses magnetic fields and radio waves to make a scan of the body, without using X-rays. The scans are 3-dimensional.

This scan allows doctors to see very detailed images of the inside of the body. MRI passes through bone and takes pictures of soft tissue, such as tendons, blood vessels, and the brain.

CT (Computerised Tomography) scan: an X-ray system using computers to produce a series of pictures of cross-sections of the body.

Lumbar puncture: a procedure to extract cerebrospinal fluid for diagnosis by inserting a hollow needle into the subarachnoid space in the region of the lower back.

Angiogram: an X-ray examination of blood vessels.

MRI (Magnetic Resonance Imaging) scan: a scan using magnetic fields and radio waves to produce images of the internal structure of the body.

CTA (Computerised Tomography Angiography) scan: a special type of CT scan to produce images of blood vessels.

MRA (Magnetic Resonance Angiography) scan: a scan which produces a view of specific blood vessels.

Possible treatments

The aim of treatment is to prevent bleeding or re-bleeding from the aneurysms. There are different possible treatments and the decision about which particular method should be used is made by a neurosurgeon, an interventional neuroradiologist (a specialist who treats aneurysms via the blood vessels), and other members of the health care team, in discussion with you and your family.

The chosen method will be the one most suitable for your particular situation and will depend on a number of factors, including the size and position of the aneurysm.

The decision to go ahead with a treatment is made when the benefits are deemed to outweigh any possible risks. Due to the individual nature of SAHs, it might be that a decision is made not to go ahead with any interventional aneurysm treatment like coiling or clipping (see following sections). Treatment will be advised if it is felt to be the most beneficial course of management.

Conservative management when there is no abnormality found

In a few cases, no aneurysm is found and this is often referred to as idiopathic (no known cause) or negative angiogram subarachnoid haemorrhage. Treatment will focus on managing your symptoms and recovery.

You might like to read the sections on 'Going Home' and 'Recovery' on pages 25 and 26.

Coiling

In the 1990s, coiling was introduced as a way of treating ruptured and unruptured aneurysms without the need for a craniotomy or open surgery (see following sections). Coiling involves treating the aneurysms from inside the blood vessel, avoiding the need to open the skull. Small metal coils are inserted into the aneurysm via the arteries that run from the groin into the brain. The coils remain in the aneurysm - they are not removed. They prevent blood flowing into the aneurysm and therefore reduce the risk of a bleed or re-bleed. Blood then clots around the coils sealing off the weakened area.

What happens before the procedure?

Although the coiling procedure is similar to an angiogram, involving a catheter being fed up to the brain via the femoral artery, it is much more complex and is carried out under a general anaesthetic in the radiology department.

This means you must not eat or drink anything for four to six hours before the procedure. The staff on the ward will advise you on this.

Prior to the procedure, an area of skin in the groin will need to be prepared by shaving, and cleaned.

On arrival at the radiology department, an anaesthetist will give you a general anaesthetic and you will be asleep throughout the procedure.

What happens during the procedure?

The room will have several large pieces of high-technology scanning equipment which are needed to perform the coiling.

The radiologist will make a small incision in your groin through which they will insert the small tube into your femoral artery. This is then guided through other blood vessels in your body until it reaches your neck then into your brain.

One by one, the coils are slowly inserted into the aneurysm. The coils are made of platinum, are twice the width of a human hair, and can vary in length. The number of coils needed depends on the size of the aneurysm. The largest coil is inserted first and then smaller coils are inserted until the aneurysm is filled. Usually, several coils will be used.

The radiologist will remove the catheter. Occasionally, the entry point in the groin will need to be sealed or stitched. It might be slightly painful, and there might be some bruising.

Coiling is a complex and delicate procedure that will take at least three hours and often longer.

An aneurysm being packed with platinum coils through the blood vessel



What happens after the procedure?

You will spend some time in the recovery unit after the anaesthetic, and may spend some time in the high dependency unit if needed.

During this time, regular neurological observations will be performed by the nursing staff. This is to check that you are waking up properly from the anaesthetic. It involves asking you simple questions, testing the strength of your arms and legs, and shining a light in your eyes. Your blood pressure, heart rate, respiratory rate, and oxygen levels will also be monitored.

The nurse will check the small wound in your groin for any bleeding and also check the pulse in your foot. This is to ensure that the blood circulating to your legs has not been affected.

It might be that the opening in the artery in your groin is plugged closed after the procedure. This is done with a device called an angioseal which dissolves within a few weeks.

You will have to lie flat, or at an angle of no more than 30 degrees, for at least six hours following the procedure. This helps with your blood pressure and prevents any excess pressure on the artery which could increase the chance of bleeding at the puncture site in your groin.

Depending on your recovery after this time, you will be able to sit up gradually. The nurses will assist you with this.

Throughout this time, the nurses on the ward will continue to monitor you and carry out neurological observations. Painkillers will be given for any discomfort or headaches you might be experiencing. You are also likely to have a drip to prevent dehydration, and possibly a urinary catheter. Because you are restricted to bed rest, you will have to wear pressure stockings to help prevent blood clots forming in your legs (deep vein thrombosis).

What are the risks of coiling?

It is likely that the benefits of coiling will strongly outweigh any possible risks, and your doctor will have discussed this with you fully before you give your consent to go ahead with the procedure.

However; as with any invasive procedure, there are certain risks associated with coiling. Possible complications include stroke-like symptoms such as weakness or numbness in an arm or leg, problems with speech, or problems with vision.

There is also a risk of bleeding, infection or arterial damage at the entry site in the groin.

How successful is coiling?

Research is still ongoing to explore the benefits and risks of coiling. Various studies have been published. The largest is the International Subarachnoid Aneurysm Trial (ISAT) which was established to explore the effectiveness of coiling compared to clipping (see below) of ruptured aneurysms. The trial involved different neurosurgical centres and a total of 2,143 patient participated. The ISAT trial showed that the long-term risks of further bleeding are low for both coiling and clipping, and the results positively support coiling as a treatment for ruptured aneurysms, both in terms of survival and in the reduction of long-term disability.

The National Institute for Health and Care Excellence (NICE) have approved coiling as a treatment of ruptured aneurysms and have published guidelines on the procedure.

Can the coils move?

Once the coils are securely in place they will not move out of the aneurysm into the artery, but in some cases the coils can move further within the aneurysm.

This might mean that more coils, or further treatment is required to fill, or treat the aneurysm completely. This is why you will have a follow-up MRA scan. Around 1 in 10 patients will require further treatment.

Clipping

Craniotomy

A craniotomy is an operation to open the head in order to expose the brain. The word craniotomy means making a hole (-otomy) in the skull (cranium). The operation is carried out by a neurosurgeon who specialises in the surgery of brain and spine.

What happens before the operation?

The general state of your health and condition you are in can affect you when you have the surgery. The surgeon and anaesthetist might delay the operation if you are very ill as a result of the haemorrhage, or another medical condition, because this can increase the risk of surgery.

The operation is carried out under a general anaesthetic which means you will be asleep throughout and will not feel anything.

A small horseshoe-shaped area of your hair is shaved over the point at which the aneurysm can be reached.

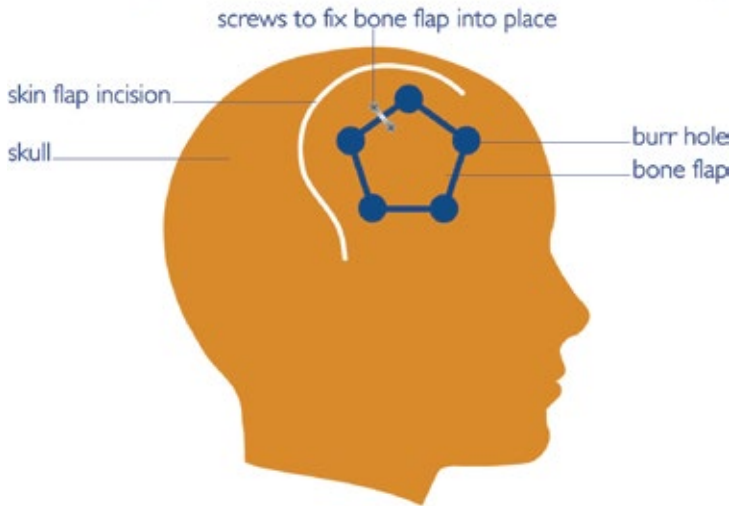
What happens during the operation?

The surgeon looks for the aneurysm and permanently clamps the base of the aneurysm using a small plastic or titanium clip.

The bone flap is then replaced and the scalp is stitched together. The bone flap is usually fixed into place with small metal screws to prevent any movement and encourage better healing.

In time, the blood vessel lining will heal along where the clip is placed, which will permanently seal the aneurysm and prevent it from growing or rupturing again.

Craniotomy incision and replacement of the bone flap



The operation takes a few hours. This includes the time taken to transport you from the ward to the operating theatre, give you the anaesthetic, the operation itself, and the time you spend recovering from the anaesthetic.

What happens after the operation?

You will usually be woken up as soon as the operation is over. You will regain consciousness in the recovery area where specialist nurses monitor your progress very closely. Occasionally, intensive monitoring is required, and you might be transferred to an intensive therapy unit or a high dependency unit. You might then be kept asleep on a breathing machine for a period of time after the operation, to allow your brain to recover. If this is likely to be necessary, your surgeon will discuss it with you before the operation. Sometimes a fine tube (catheter) is placed into the bladder to help you pass urine. All of these tubes will gradually be removed as your condition improves.

Once you have been transferred back to the ward you will be carefully observed and monitored. You will be given fluids through a drip into your vein. You might also have a drain to remove any fluid oozing from the wound.

What problems might I experience after the operation?

Rarely, a blood clot might form on the surface of the brain at the site of the operation. If this happens, depending on the size of the clot, you might need a second operation to remove it. Otherwise, the doctors and nurses will monitor your condition.

During a craniotomy, a small cut is made in the muscle that helps with chewing. As it heals after the operation, the muscle can be slightly shortened causing the jaw to feel stiff. You might have difficulty in opening your mouth. This problem usually begins to clear up after a couple of months.

It is common for there to be swelling and bruising to your face. Your eye might be closed for a day or two. The nurses will bathe your eyes for you.

As the wound in your head heals, it might feel painful and you will be offered pain-killers to help relieve any discomfort. This gradually improves and is usually better by the time the stitches are removed, three to five days after the operation. Some surgeons use stitches that dissolve and so do not need to be removed.

The skin around the edges of the wound might feel a bit numb until the healing is complete. This numbness might be painful or unpleasant and the wound might also feel itchy, or very cold. This might persist for a few months.

Wound infection is not usually a problem. Antibiotics are often given around the time of the operation as a preventative measure. Lumps or indentations around the wound are common.

The bone flap (the piece of bone cut out during the operation) might feel like it moves. Because the pressure in your head can vary, the flap of bone can move in and out very slightly. You might experience a “clicking” sensation. Although this feels strange, it is not dangerous. The bone flap is not loose; it is secure when it is replaced and will heal back into place.

Headaches are common and might last for several months before they gradually settle down. Some people find that their headaches persist for a longer period of time. This is due to the SAH, not the clipping.

Can the clip come off?

The risk of the clip coming off is extremely small. Modern clips are not affected by airport security systems. Most people are also safe to have MRI scans, but you should discuss this with your doctor or nurse.

Coiling or clipping?

The size, shape and location of the aneurysm are all factors that will determine your treatment choice.

Due to the lower risk of short-term complications (such as seizures), coiling may be chosen as the preferred treatment, although the long-term benefits of coiling over clipping are uncertain.

Recovery time and length of stay in hospital is dependent on the severity of the haemorrhage.

Other treatments

Medication:

The following are the most common medications prescribed during and after the haemorrhage:

Nimodipine

Nimodipine is a drug used to reduce the risk of stroke related to spasm (sudden contraction) of the blood vessels. This drug is taken for three weeks after the haemorrhage.

Pain relief

In the early days, you may be prescribed strong pain-killers like morphine. Codeine may also be prescribed. Other painkillers like paracetamol are used for headaches, as needed.

Antiemetics

These drugs can help to stop you feeling sick, and stop you vomiting.



High blood pressure medication

If you have high blood pressure, you might need drugs to lower it. Because having high blood pressure is known to increase the risk of haemorrhages, it is important that your blood pressure is monitored and controlled. When you return home, you should have regular blood pressure checks with your GP.

Anti-epilepsy drugs

Anti-epilepsy drugs might be used to control seizures. Some people might only need to take them for a few months, but some people might need them for life. It is important not to forget to take this medication. As your memory might not be reliable in the first few months after the haemorrhage, it can be helpful to use a special reminder pill box which can show you when your pills should be taken.

Diet, nutrition, fluids:

It is important to maintain a healthy diet so that your body is getting the nutrition it needs for strength and recovery. It is also very important to keep up your fluid intake and prevent dehydration. You should aim to drink two to three litres each day for the first couple of weeks. A healthy diet and plenty of fluids will also prevent you becoming constipated which can cause a strain in the body.

Why is another patient having different treatment to me?

Because each person is affected differently, each SAH affects different areas of the brain and differs in severity. Treatments vary for each individual person.

Complications after SAH

A subarachnoid haemorrhage can cause both short and long-term complications.

Serious short-term complications can include further bleeding at the site of any aneurysm and brain damage caused by a reduction in blood supply to the brain.

Short-term complications:

Rebleeding

This is when the aneurysm bursts again after the first haemorrhage.

The risk of this occurring is at its peak in the few days following the first haemorrhage. If rebleeding occurs, there is a high risk of permanent disability, or even death. Aneurysm repair is required as soon as possible to reduce this risk.

Delayed cerebral ischaemia

Delayed cerebral ischaemia or 'vasospasm' occurs when there is a dangerously low supply of blood to the brain, causing brain damage.

The risk of this occurring is at its peak up to a few days after the first haemorrhage.

Vasospasm of the arteries inside the brain may cause this, where a blood vessel goes into spasm, narrowing the vessels.

Symptoms of this include progressive drowsiness or the development of worsening or new neurological symptoms such as weakness of one side of the body or difficulty speaking.

Hydrocephalus:

A build-up of the cerebro-spinal fluid (CSF) which surrounds the brain and spinal cord. The build-up occurs because the CSF cannot drain away due to the presence of the blood. Symptoms include generalised headache and problems with your balance. An operation can be performed to drain the fluid away from the brain or spinal cord either with a temporary drain or permanent shunt.

Epilepsy:

Seizures can occur at any time after the haemorrhage, but are most common during the first 24 hours. If you do have seizures they can usually be controlled with medication.

(You might be interested in reading our factsheets with information on hydrocephalus and shunts, and epilepsy.)

Longer term complications:

Cognitive difficulty

This is a very common after effect of SAH. This is when a person suffers some difficulties with memory, tasks that require planning, and problems with focusing attention and concentration. There are techniques to help cope with these difficulties, such as the use of memory aids, and breaking tasks down into more manageable steps. You may find either an occupational therapist or a neuropsychologist useful in helping you with any cognitive dysfunction you may suffer.

Fatigue and **headache** are both short term and long term effects of an SAH. These are discussed further on page 26.



Emotional problems

Emotional problems may also occur as an after effect of SAH. Some of these problems include; depression, anxiety disorder and PTSD (post-traumatic stress disorder). You may find it helpful to speak to a therapist to help you with these problems. Cognitive Behavioural Therapy (CBT) can be helpful.

Epilepsy

Epilepsy occurs in around 1 in 20 people that have suffered a subarachnoid haemorrhage.

The first seizure normally occurs in the year following the haemorrhage. Epilepsy can be controlled using medication, which a neurologist will discuss with you.

Going home

You might be discharged home or back to your first hospital. This will depend on the speed of your recovery, what support you have at home, and how far you have to travel. Most people return to their first hospital to begin their period of recovery.

Depending on the affects of your SAH, arrangements might be made for you to have physiotherapy, occupational therapy, or speech and language therapy. Useful contact details can be found at the back of the booklet.

Physiotherapy: helps physical recovery and the recovery of movements

What follow-up tests and investigation will I need?

It is likely that you will have a further MRA scan after three to six months. You may then have further MRA scans. The timing of the follow-up tests will differ depending on the set-up in your local area.

What precautions should I be taking now?

- Continue to take your medication as prescribed
- Keep up your fluid intake (two to three litres a day for the first 2-3 weeks)
- Give up smoking if you smoke
- Don't drive; contact the DVLA (see page 34)
- Avoid activities like climbing ladders for the first three months
- Make sure your blood pressure is controlled

Is there permanent damage?

Not necessarily. Many people make a full recovery. Some people might experience various disabilities and problems which can continue to improve several years after their SAH.

Recovery

Recovery from an SAH is an individual process and there is no standard pattern. It is very difficult to predict what sort of recovery you might make, or what timescale might be involved.

The outcome will depend on which part of the brain is affected and how much damage is done by the bleeding.

Tiredness, restlessness and fatigue

It is common to experience severe tiredness, especially in the first few months after the haemorrhage. You might find that you become exhausted even after commonplace activities like going to the shops, watching television, or talking with your friends. This is because your brain has to concentrate hard to process everything going on around you and so becomes tired very quickly. It is your body's way of telling you to slow down. Taking regular short breaks can help. Try to do this at least three times a day for around 20-30 minutes. Listening to your favourite music can help, but try to avoid anything too stimulating like watching television or reading. It is important to note that different people find different activities relaxing, so do what best suits you.

You may also find that you have difficulty sleeping at night and can only sleep for short periods. Some people find that aromatherapy helps them relax and sleep. Lavender is a popular fragrance. Citrus oils can help relaxation but are less likely to make you sleepy.

You can place a few drops on your pillow or use the fragrances in an oil burner. If you wake in the night and cannot get back to sleep, try getting up and making a hot drink rather than lying there worrying about not sleeping.

It can help to have a daily routine. Try to get up and go to bed at the same time each day. Plan some relaxation breaks during the day. If you have returned to work, you could talk to your employer about the possibility of being given time for extra breaks during the working day.



Headaches

Headaches following your discharge from hospital are common but usually ease with time. They tend not to be as severe as when you had the haemorrhage and can often be controlled with painkillers like paracetamol and codeine. Fatigue is closely associated with headaches and might become worse when you are tired. Again, this is

your body's way of telling you to slow down. It is important you drink plenty of fluids throughout the day; at least two litres. This helps blood circulation in the brain and prevents dehydration. Alcohol, and caffeine-based drinks like cola and coffee increase the risk of headaches.

It is also important to avoid things that put too much strain on your body like becoming constipated or lifting heavy weights as these can increase the pressure in the brain and so cause headaches.

You may be interested in our 'Headache' booklet.

Unusual sensations

People often say that they experience odd or unusual sensations in their brain which are different from headaches. They are very difficult to explain but people sometimes describe them as “tickly” and something like water running across the surface of the brain. No-one knows why these sensations occur but they are common and are nothing to be concerned about. They will usually ease in time.

Loss of movement and/or feeling

An SAH can cause a loss of movement and/or feeling in your arms or legs. Each individual is affected differently and the severity of the problems can vary from a slight arm or leg weakness to a complete loss of power.

You might also feel odd sensations in your arms or legs. These can be difficult to describe. The feeling of clothes against the skin or the touch of another person may be exaggerated. Limbs might feel heavy and numb. Some people experience pins and needles. It might be difficult to distinguish between hot and cold, so you should be careful when taking a bath or shower to avoid getting burned.

You can experience any combination of these problems so you will need an individual assessment and exercise plan. This plan will be devised for you by a physiotherapist either in hospital or in your home. Try not to over exercise as this can lead to injury and might delay your recovery. It is better to do little and often.

It can be helpful to apply body lotion or massage oil regularly to your affected limbs. This maintains good skin condition and helps keep your muscles supple.

Senses

Following an SAH, some or all of your senses might be affected, including your sight, smell, taste and touch. The problems will depend on the particular part of the brain affected. Some of the symptoms might be temporary; some might be permanent.

Sight

Your vision might be disturbed in various ways: blurring, blind areas, black spots, or double vision. The doctors will test your vision before you are discharged from hospital. This enables them to monitor any changes over a period of time. These tests will be repeated at follow-up



appointments. If you do have visual problems as a result of the haemorrhage, you might be referred to an eye specialist. Improvements in vision usually take place gradually over weeks and months.

Double vision (diplopia) can be very disturbing. It can help to wear an eye patch over the affected eye for one to two hours then transfer the patch to the other eye for the same period of time. This will encourage the eye muscles to strengthen and stabilise. Both eyes should be treated the same to prevent one eye from becoming weaker. Your neurologist or optician will be able to advise you further on this technique.

If you already wear glasses or contact lenses it is a good idea to wait for two or three months after the haemorrhage before having your eyes tested again. This is because your vision might take a while to settle

down and your glasses or lenses might need changing many times while this happens. Of course, this can then become expensive. Your optician will be able to advise you further on the best course of action to take.

Memory

Memory and concentration problems are common following an SAH. You might find it difficult to concentrate for long periods of time and this might make even simple tasks like reading a book or making a cup of tea difficult and frustrating. Try to break tasks down into small steps so you only have to concentrate for short periods of time before taking a rest.

After an SAH, certain parts of your memory might be affected. You might not remember very much about the haemorrhage itself or what happened when you were admitted to hospital. You might find that you can remember things that happened to you a few years ago but find it difficult to remember new information like the name of the person you have just met. Many people find that their memory improves with time, although it might never be quite as good as it was before the haemorrhage.

You can ask your GP or neurologist to arrange for you to see a psychologist who can carry out a neuropsychological assessment. Typically, this will involve doing a number of different tests to assess what specific memory and concentration problems you are experiencing.

Helpful tips to aid with your memory:

Keep a book or a diary where you write down all the important things you need to remember. Try to keep it in the same place: for example, by the telephone.

Write down telephone numbers or peoples' names on a piece of paper as soon as you can. Post-it notes in bright colours can be really useful memory aids as you can stick them everywhere.

Pictures are often easier to remember than abstract facts. For example, if you meet someone called Anne Fisher you might think of Princess Anne and imagine the person you met wearing a crown and fishing by a river bank. The more bizarre the picture, the easier it will be to remember.

Try not to get too anxious or stressed as this will make it more difficult to remember information. If you do become anxious, take some deep breaths, breathing in through your nose and out through your mouth.

Use an alarm clock to help you to remember to do something like make a telephone call or go to an appointment.

Speech

Speech, language and comprehension are complex forms of communication, and often disturbed following an SAH. Commonly, people experience problems finding the right word. In severe cases this may be referred to as expressive dysphasia. You might find it difficult to understand what another person is saying. This is called receptive dysphasia.

Communication problems can be very frustrating and you might need the help of a speech and language therapist who can assess your problems and needs. Following the assessment, the speech and language therapist will give you guidance and exercises for you to practice at home.

You might find it helpful to use a picture board. This could be a sheet of paper displaying pictures of everyday items and the alphabet. If you are having difficulty finding words you can point to a specific picture on the board or use the alphabet to spell out what you want to say.

Emotions

Many people find it difficult coming to terms with having had an SAH. You might feel depressed, tearful, angry or anxious for no apparent reason. These feelings can be physical (related to what has happened to your brain), emotional (a reaction to the traumatic experience), or both. Many of these changes are temporary and will improve over time. It can be helpful to stick to a routine and plan what you are going to do each day, even if it's just going to shop to buy a newspaper or going for a walk in the park.

As time goes by, it can be hard to express and explain to others how you feel and how you have changed, especially as you might appear to have recovered physically. This can lead to feelings of isolation. It often helps if you can talk to a friend or relative about how you are feeling rather than keeping your feelings bottled up inside. You might want to talk to your GP about seeing a clinical psychologist or counsellor.

Feelings and worries

It is natural to feel anxious and to worry about the future, especially when you are back at home. Many people are concerned that the haemorrhage might happen again, although this is very unlikely. It can be difficult recovering from such a major life event. The first few weeks and months can be a very intense time and you might find that friends and family treat you differently. Everybody has different ways of coping. If you are struggling to come to terms with what has happened it might be helpful to keep a simple diary of your thoughts and your physical recovery. This will also help you to record how you are improving as time passes.

It is common for people to become irritable or angry after an SAH, but they might not be aware that their behaviour or personality has changed. Irritability or angry outbursts can be very difficult for friends or family to cope with. Communication and talking openly is important at this time.

Will it happen again?

It is extremely unlikely and you should now have a normal life expectancy.

What if I bang my head?

A bang on the head will do no more harm than before the haemorrhage.

Everyday activities



Can I drive?

You are legally obliged to notify the Driver and Vehicle Licensing Agency (DVLA; see our 'Useful Contacts' section) about your condition and must not drive until you have DVLA approval. Be sure to contact your insurance company.

You might be permitted to resume driving once a doctor has confirmed that you have made a full recovery. If you are experiencing problems as a result of the haemorrhage or have had certain types of treatment, you might not be allowed to drive for a given period of time (often up to one year). If you have seizures, this period might be extended until the seizures are controlled.

If you continue driving without DVLA approval, insurers will not be obliged to meet any costs and you might be uninsured. This would make you personally liable for any damage you cause to others.

If you have any disabilities you will probably need a medical examination to be certain you can control a vehicle safely. Modifications to your vehicle might be required. Your vision will also be checked.

You can re-apply for your license before the date you are scheduled to return to driving so that it is ready by the time this date comes around. You will probably only be given a three year licence.

Regulations are stricter for HGV (Heavy Goods Vehicle) or PSV (Public Service Vehicle) licenses.

Can I fly?

Yes, depending on your recovery. There is nothing to stop you from flying once you are fit enough to do so.

You might experience headaches during take-off and landing due to pressure changes. You should increase your fluid intake, but try to avoid alcohol and caffeine as these can increase the risk of headaches.

You are advised to avoid flying for at least ten days after a craniotomy and up until six weeks after a subarachnoid haemorrhage, as you are unlikely to feel well enough to travel. You should inform your insurance company about the haemorrhage.

It is worth bearing in mind that air travel can be stressful for people in good health so it can be especially stressful if you are feeling unwell.

Will the coils or clips affect airport security machines?

No. It is perfectly safe to pass through security machines.

Can I play sport?

Yes, but you should avoid all contact sports like rugby, boxing or martial arts for at least six months. You can then discuss with your specialist the possibility of resuming these sports if you wish to.

Can I swim?

Swimming is fine once any wounds have healed, but it is a good idea to be accompanied for the first few months while the risk of having seizures is at its highest.

Can I have sex?

You can resume sexual activity as soon as you feel ready. There is no

risk. Women are advised to avoid becoming pregnant for the first six months following subarachnoid haemorrhage.

Can I wash or colour my hair?

Yes. You can use any hair products like shampoo, conditioner or hair dyes. You can also have treatments like perms. After a craniotomy, you should wait until the wound on your head has healed.

Can I drink alcohol?

You should not drink any alcohol for the first few weeks. After that, small amounts of alcohol are safe, depending on any medications you may be taking, although you are likely to feel the effects more than you used to. Some people find that they have more severe hangovers after an SAH. If you are taking any medication, you should check with your doctor if it is safe to drink alcohol.

When can I go back to work?

It is common for people who have had an SAH to take several months off work. Many people find it helpful to go back part-time or for a few hours each week before returning to full-time work. Other people find it helpful to do a less stressful or less physical job than the one they used to do. It depends on the individual. You might like to see if there are any clubs or voluntary organisations with whom you can volunteer as a stepping stone to returning to work.

Can I have MRI or MRA scans?

Yes. Modern platinum coils and plastic or titanium clips are designed to be safe with MRI scanning equipment. However, each individual case should be discussed with the consultant neuroradiologist. Scanning equipment varies in different hospitals.

Getting back to normal

Am I progressing quickly enough?

There is no set timescale. Each person is different. You can expect to have good days and bad days during your recovery. Tiredness and fatigue are common after any serious illness, especially if you have had surgery.

Am I doing too much?

You will know if you are doing too much if you become exhausted and need to rest. Try to recognise when your body is letting you know that you need to slow down.

Will I ever be the same again?

It can take many months after an SAH to feel that life is getting back to “normal” and people often ask whether they will ever be the same again. This is a very difficult question to answer as everyone’s recovery is different.

There is not a great deal that you can do to speed up your recovery. The main advice is to take it easy and listen to what your body is telling you.

For friends and family

It can be difficult for friends and family to understand what has happened to someone who has had an SAH. They might look fine physically, but it can take a long time to get back to “normal”.

Often, friends and family find it hard to know what to say. They do not know whether to ask someone if they are OK, or to behave as if nothing has changed. People who have had an SAH can find it difficult to talk to about the problems they are experiencing and might feel isolated as a result. You could mention that you have read this booklet as a way to introduce talking about how the person is feeling.

Tips for friends and family:

- **Keep a routine and avoid surprises**
- **Try not to take remarks personally**
- **Try to keep calm at all times**
- **Try not to let too many people visit at the same time, or have too many distractions going on**

Health professionals

Neurosurgeon: A specialist doctor who performs brain and spine operations.

Neurologist: a doctor who does not perform operations but specialises in the diagnosis and treatment of people with neurological conditions.

Interventional radiologist: a specialist doctor who performs procedures like the coiling of brain aneurysms.

Radiologist: A specialist doctor who performs, reports and reads scans such as angiograms, CT scans, MRI scans, and X-rays.

Nurse specialist: a nurse who specialises in a particular condition, for example, subarachnoid haemorrhage.

Neuropsychologist: a psychologist specialising in the functions of the brain, particularly memory, concentration and problem solving.

Neurophysiotherapist: a chartered physiotherapist who specialises in treating people with neurological conditions. A neurophysiotherapist will assess, plan and treat people with physical problems.

Speech and language therapist: a specialist health professional who assesses, plans and treats people with communication and swallowing problems.

Occupational therapist: a specialist health professional who offers practical support and advice on everyday skills and activities, for example, using equipment at home.

Counsellor: a person trained to give guidance on personal or psychological problems.

Useful Contacts

Subarachnoid haemorrhage:

Brain and Spine Foundation Helpline

3.36 Canterbury Court

Kennington Park

1-3 Brixton road

London SW9 6DE

0808 808 1000

www.brainandspine.org.uk

(Run by neuroscience nurses, providing support and information on all aspects of neurological conditions for patients, their families and carers, and health professionals.)

Brain and Spinal Injury Charity (BASIC)

Brain and Spinal Injury Centre

554 Eccles New Road

Salford M5 5AP

0870 750 0000

www.basiccharity.org.uk

(Support and information on neurological conditions.)

Different strokes

9 Canon Harnett Court

Wolverton Mill

Milton Keynes MK12 5NF

0845 130 7172

www.differentstrokes.co.uk

(Support and information for younger people affected by stroke.)

The Stroke Association

240 City Road

London EC1V 2PR

0303 303 3100

www.stroke.org.uk

(Support and information on stroke.)

Communication problems:

Connect

St Alphege Hall,

King's Bench Street, Southwark

London SE1 0QX

0207 367 0840

www.ukconnect.org

(Support and information on communication problems (aphasia.))

Speakability (Action for Dysphasic Adults)

240 City Road

London EC1V 2PR

020 7261 9572

www.speakability.org.uk

(Support and information for people with aphasia.)

Mental Health Services:

Mind

15-19 Broadway, Stratford,

London E15 4BQ

020 8519 2122

www.mind.org.uk

(Support, advice and information for mental health conditions.)

Rethink

Rethink Mental Illness

89 Albert Embankment

London SE1 7TP

0121 522 7007

www.rethink.org

(Support, advice and information for mental health conditions.)

Visual problems:

Royal National Insitute of Blind people (RNIB)

105 Judd Street

London WC1H 9NE

0303 123 9999

www.rnib.org.uk

(Support and information on visual problems and sight loss.)

Epilepsy:

Epilepsy Action

New Anstey House

Gate Way Drive

Yeadon

Leeds LS19 7XY

0808 800 5050

www.epilepsy.org.uk

(Support and information on epilepsy.)

Epilepsy Society

Chesham Lane

Chalfont St Peter

Buckinghamshire SL9 0RJ

01494 601 400

www.epilepsysociety.org.uk

(Support and information on epilepsy.)

Driving:

Driver and Vehicle Licensing Agency (DVLA) Drivers Medical Group

Longview Road

Swansea SA99 1TU

0300 790 6806

www.dvla.gov.uk

www.direct.gov.uk/motoring

(Information on medical rules for drivers.)

Flying:

Aviation Health

17c Between Towns Road

Oxford OX4 3LX

01865 715999

www.aviation-health.org

(Information on health and flying.)

General health:

NHS Choices

www.nhs.uk

Further reading

The Brain and Spine Foundation produces further information on the following related subjects: angiogram, brain and spine scans, coiling of brain aneurysms, craniotomy, epilepsy, hydrocephalus and shunts, and vascular malformations of the brain.

A Dented Image: Journeys of Recovery from Subarachnoid Haemorrhage, Alison Wertheimer

Personal accounts of recovery from SAH

References

Details of medical references used for this booklet are available at www.brainandspine.org.uk/references or on request from the Brain and Spine Helpline 0808 808 1000

Thank you

We would like to thank everyone who contributed to this booklet, especially...

The Graham Wood Charitable Trust

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Tina Stephen

Sarah Davis

Janice Woodburn

Amy Halls

Notes

A series of 21 horizontal dotted lines for writing notes.

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Brain and Spine Foundation

The Foundation provides support and information to those affected by the many conditions associated with the brain and spine. The charity relies heavily on voluntary donations and fundraising events to provide the services which have helped many thousands of people across the UK.

You can help the future work of the Brain and Spine Foundation by

- Making a donation
- Organising or taking part in a fundraising event
- Offering your time as a volunteer
- Remembering the Brain and Spine Foundation in your will

Further details available from the address/telephone number below or from www.brainandspine.org.uk.

Brain and Spine Foundation

LG01 Lincoln House, Kennington Park, 1-3 Brixton Road,
London SW9 6DE

Telephone (switchboard) 020 7793 5900

Helpline: 0808 808 1000

www.brainandspine.org.uk

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