



A patient guide to
RECOVERY FROM
brain aneurysm treatment



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Recovery - Introduction

Having a brain aneurysm and undergoing treatment is a major life event which continues even after discharge from the hospital. There is potential for psychological and physical changes which can be minor or significant, short-term or long lasting. Recovery for patients who have had a subarachnoid hemorrhage tends to be longer and more difficult than for those who have not had an aneurysm rupture. Older people and those with chronic medical problems may also recover more slowly. Some people may require rehabilitation. Other patients are able to care for themselves after a short period of recovery. It is important to keep in mind that each situation is unique and recovery times vary.

One of the most frequently asked questions by brain aneurysm survivors and their families is: “How long until I get better”? Unfortunately there is no way to predict the length of time it will take to improve or even how much improvement will actually occur.

There will be a better chance for recovery if the survivor and the family maintain hope, even in the setting of a long recovery process. A famous rehabilitation pioneer, George Prigatano, Ph.D. frequently tells his patients, “If the brain is alive, it can learn.” Remind yourself of this: the brain can learn new skills for a lifetime.

“Believe that life is worth living and your belief will help create the fact.” William James

From this moment forward, your life is changed, not necessarily for the worse, but still changed in a variety of noticeable and subtle ways. This journey can be made easier with support from healthcare providers, family and friends, but most importantly through your inner strength and courage to survive.

Patients recovering from treatment of an aneurysm experience many physical and emotional changes. This booklet contains the more common ones and some suggestions regarding how to deal with them. Keep in mind, however, that concerns about your individual problems should be discussed with your physician or health care provider.

Potential Deficits: Short-term & Long-term

Survivors of brain aneurysms might suffer short-term and/or long-term deficits as a result of a rupture or complex treatment. In many cases, these deficits disappear over time. The recovery process is long and it may take weeks, months, and even years to understand the level of deficits you incurred as a result of this trauma.

Survivors should seek neurological assessment from a neuropsychiatrist or neuropsychologist to determine their level of cognitive functioning and associated problems. In many cases, patients enlist speech, physical, and occupational therapists to help them regain normal functions.

For subarachnoid hemorrhage survivors, the neurological and physical deficits are often greater, more noticeable, and require a longer recovery period. Some, not all, SAH survivors may suffer from the following:

- Stroke
- Chronic headache or head pain
- Partial or complete blindness
- Peripheral vision deficits
- Cognitive processing problems
- Speech complications
- Perceptual problems
- Behavioral inconsistencies
- Loss of balance and coordination (brain stem/ cerebellar aneurysms)
- Decreased concentration
- Short-term memory difficulties
- Fatigue

Most of these deficits decrease over time with the help of therapy. Many patients will recover and regain most of their functions. More severe hemorrhagic patients might suffer more serious and long-term effects. Each patient has a unique set of difficulties.

Work with your family members to help you recognize your strengths and weaknesses. Sometimes, family members who see you daily



are the best ones to notice slight deficits. They can help be your eyes and ears, as well as help you gain a better understanding of how to deal with these subtle differences.

Many of the “background” deficits that are less subtle tend to last longer, making it difficult for survivors. Be patient and talk to your therapist or doctor about how to deal with these difficulties.

Physical Changes

Neurological

Specific Deficits: Survivors may have weakness and/or other deficits due to subarachnoid hemorrhage or complications during hospitalization. Some common deficits are: arm or leg weakness, problems speaking, balance and walking difficulties and memory concerns. Some of these are obvious and can interfere significantly with daily functioning. Other deficits may be recognized only by the patient or family members. Still other deficits such as thinking problems can be quite subtle and may not even be apparent until one tries to return to work.

Many of these deficits improve with time, but physical, occupational, and speech therapy can be very helpful and should be considered even when deficits are minor. Persistent difficulties with memory and cognition can be a challenge. Evaluation by a neuropsychologist is invaluable in helping to determine the cause and extent of the problem.

In most people, reaction time is slower during recovery for at least some period of time. It is not safe to drive under these circumstances. Follow your physician’s advice regarding when you can return to driving. This varies from person to person. If you have memory/cognition or visual or other physical problems, you should not attempt to drive. The Department of Motor Vehicles does provide testing to determine if you can return to driving.

Visual Problems: Some patients have specific problems with vision due to the location of the aneurysm. Others have problems with focusing or blurry vision as a result of subarachnoid hemorrhage. Problems with focus and blurred vision are common and tend to improve over time. If vision problems do not improve, contact your physician. Consultation with a neuro-ophthalmologist might be helpful.

Lack of smell and/or taste: Patients often report changes in their ability to taste and/or smell. If the aneurysm ruptured, smell and taste deficits can be caused by blood that irritates the nerves that control taste and smell. If the aneurysm did not rupture, the same smell and taste deficits can be caused if the aneurysm is located in an area that it can compress the nerves surrounding it. Unfortunately, these deficits may not get better with time.

Seizures: Seizures may occur at the time of aneurysm rupture or sometimes as a result of surgery on certain parts of the brain. Your neurosurgeon may put you on an anti-seizure medication in the hospital. In certain cases your doctor will have you continue this medicine after you go home. If there are no further seizures, the medicine is usually continued for only a short time as determined by your physician. If you are on anti-seizure medicine, it is important that you take the medicine as ordered. You should consult your physician if you have any concerns regarding the medication.

Post-Surgery:

Common problems after open surgery are:

Incision pain/numbness: The pain is usually localized to the surgical site. It may take several weeks for the incision to heal. After several weeks, you may experience brief episodes of sharp pain in the incision area as the nerves grow back. This can be worrisome, but is not cause for concern. The pain will go away with time. The incision area can also feel numb; this may or may not get better with time.

Hearing loss: You may notice muffled hearing on the side of the surgery. This deficit is due to the operation and will get better with time. However, it may take several weeks to notice improvement.

Jaw pain: This occurs on the operative side of the face when you try to open your mouth to eat or brush your teeth. It is due to manipulation of the muscles during surgery. The jaw pain will naturally improve over time. You may be able to speed up your recovery by opening and closing your mouth 4-5 times/day, gradually increasing how wide you open it. Notify your surgeon if the pain persists after 6 weeks; physical therapy may be prescribed to help the healing.



Clicking noise in head: This is common when you position your head in different ways and can be alarming. There is no need to be concerned, this is a normal part of the recovery process. It is the bone healing and goes away after several weeks.

Post-Embolization:

If the aneurysm was embolized, you may experience:

Headaches: These can be fairly intense for the first few days after treatment but typically subside within one week.

Groin pain: There may be bruising and discomfort at the injection site in the groin. You should avoid strenuous activity and hot baths for one week after treatment. A hematoma (hard large blood clot) can develop at the site. Should this happen, or if there is increased pain or swelling in the area, contact the physician who performed the procedure.

Hair loss: Radiation can occasionally result in hair loss. The hair loss usually only affects a small area and is temporary. The hair will grow back. Keep in mind other things such as stress or medicines can also cause hair loss.

General Physical Problems

Headaches: Many patients with aneurysms experience headaches. Headaches are usually more of a problem for those who had a hemorrhage. The headaches can vary in intensity from day to day, and last for several weeks or longer. Prescription pain medications may be needed for the first couple of weeks after your treatment. You should switch to over-the-counter pain medications, such as Tylenol, as soon as possible. If headaches are not eased by pain medications – or if the headaches continue even after several weeks, notify your physician. Some patients do have migraine-type headaches which can be treated with special drugs and treatments by neurologists or pain subspecialty doctors.

Headaches can be frightening, particularly for those people who have had an aneurysm rupture. Keep in mind that the likelihood of a treated aneurysm rupturing is almost zero. Headaches due to aneurysm rupture are not only severe but sudden. Call 911 in the rare case that a severe and sudden headache occurs.

Some aneurysm patients have a long history of headaches. These headaches will not be cured by treatment of the aneurysm, as they are not related. The headaches may seem to go away for awhile but unfortunately usually return.

Fatigue: Fatigue is the most common problem in the recovery process. You may feel tired all the time and have no energy or “get up and go”. Normal everyday activities, even simple ones such as taking a shower, wear you out. You may feel more tired after your treatment, leading you to take more naps, only to find that you have trouble sleeping at night. This is normal. Keep in mind your body has been through a lot. Your body needs to heal. It needs rest and nourishment before it can function well again. Early, on you need to just rest and eat well; your job is to help your body heal. As time goes on, gradually increase your activities and the amount of time you spend doing them. It can take months before your activity level returns to where it was before your treatment. Do not get discouraged and take it one day at a time.

If sleeping problems persist, you should talk with your healthcare provider. Re-establishing normal sleep patterns after a major illness can be difficult. Sometimes the short term use of a sleeping medication may be beneficial.

Low back pain: Some people experience low back pain and/or shooting pain down the back of the leg. If the aneurysm bled, your back pain may be caused by blood in your spinal fluid that is irritating the nerves. This condition will get better with time. Low back pain can also be due to lying in bed for many days and lack of activity. This type of back pain usually gets better as you increase your activity level, but may require physical therapy. Gentle stretching or a heating pad may help relieve the pain. Notify your health care provider if pain persists.

Constipation: Constipation is common and may be due to inactivity and/or a diet low in fiber or fluids. The major cause of constipation after aneurysm treatment is use of narcotic medications. Constipation usually improves with increased activity and decreased use of pain medications. Stool softeners like Colace can be helpful as are mild laxatives such as Metamucil. You should avoid straining or pushing.



Memory

“They may forget what you said, but they will never forget how you made them feel.” Carl W. Buechner

Memory problems after brain aneurysm rupture and/or treatment are a real problem. Survivors might remember events from ten years ago, but cannot seem to remember who called yesterday or where they put their keys. Memory involves many facets of the brain, and if a brain aneurysm or treatment damaged any of those areas, your memory will suffer. Many survivors regain their ability to remember as they continue to heal, while some continue to experience difficulty with short-term memory for years.

Survivors of ruptured aneurysms usually do not remember the event or much of what happened in the hospital and never will. This can be disconcerting but is normal. Survivors may ask over and over what happened and it doesn't seem real that they have “lost” this part of their life. Family members may need to explain many times what happened.

Absorbing, storing, and recalling information are some of the problems survivors face after a rupture or treatment of a brain aneurysm. Below are several strategies for coping with these potential problems.

To absorb information more clearly:

- **Link** — associate new information with something old.
- **Simplify** — sensory and language overload are a real issue. Shorten sentences for easier understanding; break up larger pieces of information in order to focus better.

To store information more clearly:

- **Repeat** — immediately after someone says something or you learn something new, repeat it to yourself. Then wait a few minutes, and repeat it again to see if you remember. This sounds funny, but it works!

To recall information more clearly (This is hardest for most survivors.):

- **Organize** — never before were sticky notes so important. Invest in several packages of sticky notes, along with a daily planner, a calendar,

or an electronic device such as a smartphone. You can also consider a tape recorder if you think that will help you remember things. Writing down important information, such as dates, doctor appointments, medication schedules, addresses and phone numbers is critical. Also, put items such as keys in the same place all the time.

Emotions

Some patients may have some or all of the following emotional experiences:

Depression: This is very common to all survivors, whether you suffered a ruptured aneurysm or were treated for an unruptured aneurysm. Some of it may be chemical, while another part may be physical. The brain has been injured by treatment modalities, either surgical or endovascular or by the hemorrhage itself. Now the brain needs time to heal. See page ten for more information about depression and how to cope with it during recovery.

Irritability, Frustration, and Confusion: Most survivors experience temporary loss of control over emotions. This can manifest itself in anger, frustration, and lashing out at oneself and others. You may find that you get tearful for no reason at all. A commercial on television may cause you to cry! Confusion about what is happening to you is common, so talk about it. You need to recognize your limits. This will improve throughout recovery. These symptoms get better with time.

Distractibility: Most survivors have problems focusing. Their attention span is short. They start something but do not finish it and find their attention drifting from one thing to another. They get flustered when they try to shop.

Some of this may be due to fatigue, another reason why rest is important. However, the main reason is that the brain is still trying to heal itself and is not yet functioning normally. The brain cannot do too much at one time.

It is important to keep activities short and simple, and to work on one task at a time. Allot a certain amount of time to complete a project and do not let yourself be distracted. Break up projects into short



mini-projects. Make a daily schedule of activities and stick to it as much as possible. Have a family member help you with projects and help you to remember to focus. Isolate yourself in a quiet room if necessary.

Do not try to do too much at one time. For instance, do not try to watch TV, work the crossword puzzle, and talk on the phone at the same time.

Have your family limit visitors. Visitors mean well but can wear you out. If they want to help, suggest they prepare a meal or do shopping for you.

Avoid noise and lots of people as this can be overwhelming. Participate in quiet, enjoyable one-on-one activities such as going for a walk with a friend or going out to dinner at a quiet restaurant with a family member. Avoid malls.

Lowered Self-Esteem/Relationship Changes: You may have changes in your self-image and self-confidence as a result of new physical and mental limitations. You need to talk to your family, doctor, and therapist about how you feel and how to deal with the “new” you. You are not any less capable of leading a normal life. It is just going to require adjusting to your surroundings and giving yourself time to heal. You may notice changes in relationships with family and friends, so it is important to discuss your feelings with them. Many times these changes are temporary, and as you heal, your relationships often return to “normal!”

Loneliness: You may feel different, or isolated, as a result of the aneurysm treatment. Talk to others. You are not alone!

Attending a local Brain Aneurysm Support Group meeting or connecting with others on the BAF website support community (www.bafsupport.org) gives you an opportunity to connect with others experiencing the recovery process.

Depression After An Aneurysm

Survivors, family members, and caregivers all tend to experience sadness and depression during the rehabilitation process. For the survivor,

depression can be caused by the aneurysm itself and also by the life changes that might occur after the aneurysm. While you are struggling with cognitive impairments that are difficult to cope with and understand, you may experience unpredictable hardships unrelated to your recovery. Things like financial hardship or the loss of a job can further complicate your already difficult situation. Family roles may alter radically, with husbands providing care for wives, or children caring for parents. All of your relationships are transformed by an illness that came without warning.

You, the survivor, and your caregiver both need a complete understanding of the symptoms of depression, and how depression affects the rehabilitation process. Depression takes on many forms and includes:

- Feelings of sadness on a daily basis
- Guilt and regret about past life events and current problems
- Anger
 - “I’m not worth anything anymore.”
 - “I’ve let everyone down.”
 - “I’ll never get better.”
 - “I’ve done something bad to deserve this.”
 - “I’m stupid for letting myself get sick.”
 - “I’m never going to work again.”
- Morbid thoughts
 - Wishing for death or thinking of suicide
 - Constant worry about the health of others
 - Hopelessness
 - Worthlessness
- Lethargy - no motivation
- Loss of pleasure in activities previously enjoyed
- Poor appetite – weight loss or gain



- Crying more than usual
- Irritability
- Disturbed sleep
 - Early-morning awakening
 - Disturbing dreams
- Poor sex drive

If you experience some of these symptoms, you should visit a primary care physician, which might be followed up by an evaluation and/or treatment from a psychologist or a neuropsychologist. Your doctor might recommend antidepressant medications as one effective treatment for depression. In addition, talk therapy with a psychologist or other trained therapist might be recommended. Research indicates that a combination of medications and psychotherapy is the most effective way to treat depression.

Negative thoughts that prey on your mind and cloud your emotions serve no purpose. If you doubt that things will ever get better and despair that they might even get worse you will descend further into darkness. In cognitive-behavioral psychotherapy, the therapist helps both you and caregiver substitute faulty thinking (such as “I will never get better”) for more rational and adaptive thinking (such as “the brain is really good at improving. It will take time, but I’m going to make a lot of progress.”). These positive replacement thoughts are a valuable tool and offer hope for a better future.

If either you or your caregiver is depressed, you will struggle with powerful pessimistic thoughts since depression itself is a generator of negative thinking. You often become self-critical, erroneously believing that others do not care for you or that there is no chance of recovery. You must be consistently encouraged to stop being negative and instead apply positive thinking.

Depression has an “up and down” course and you must accept this. It is easy to develop negative thoughts during “down” or depressed periods and to develop the belief that improvement is impossible. It takes tremendous strength and practice to overcome these negative

thoughts, but it can be accomplished with effort. Thoughts such as: “Things will get better over time, or “we can deal with the obstacles we encounter during the rehabilitation process” will help you, the survivor and your caregivers complete the difficult journey through rehabilitation. You need to be patient with yourself and accept the unpredictability of your feelings. Understand that you cannot control where your emotions take you and do your best. Whether you are the survivor or the caregiver, practice your positive thinking and you will eventually find light at the end of your tunnel.

“My husband, daughter, parents, and sister had a tremendous amount of faith and optimism, which completely changed the worst time of my life. Because of my husband’s love and caring, I am still alive. He has everything to do with my recovery and the fact that I am home today. My ten-year-old daughter’s impact has been no less powerful. She was a typical ten-year-old kid when I got sick, but immediately became an adult and helped with everything.”

A Survivor

A Note For Caregivers

This traumatic event affects not only the patients, but also family and close friends. You watched your loved one suffer in ways you thought were not possible, watched them go through treatment, and now watch as they struggle to regain a sense of themselves. You might be experiencing feelings of anger, frustration, guilt, regret, and hope — all normal emotions that need to be talked about and processed.

Questions you might be asking yourself:

Will my loved one be the same person as he/she was before the illness? How do I deal with his/her anger, fear, and depression? Will our relationship be the same? Where can I get help? How can I help him/her?

Family and friends play a key role in a patient’s recovery. You can be their eyes and ears, an advocate for good care, and a vehicle for their healing. Many survivors make a full recovery, with some residual deficits, but the process is long, lasting weeks, months, or even years.



Patience is the key to the successful implementation of support for the survivor.

Accepting this new person is the first step in helping him/her recover and move ahead. Once you have taken your loved one home from the hospital or rehabilitation facility, the hard work begins. At home, you will begin to notice those “background” deficits that might not be blatant, but nonetheless impact his/her functioning and the ability to interact with others inside the home and in the workplace or other social settings.

Consider the following points to help with the rehabilitation process:

- Set small, achievable goals for you and the survivor.
- Note your loved one’s strengths and weaknesses, physically and cognitively, so you can be aware of them and not allow them to cause added frustration and stress in your lives.
- Seek therapy, both individual and/or group, to work through your emotions.
- Develop a plan, reward yourself, and always talk to each other.
- Find time to have fun together.

Returning to Work: Making It Successful

“Success is never final.” Winston Churchill

In many cases, returning to work is an achievable goal. How you defined work before your illness may be different from how you define it now. Survivors who have gone through such a traumatic event can continue to be contributing members of society. This contribution may be an altered version, but it can be a positive, confidence building experience that allows you the freedom to continue pursuing your dreams and work goals.

Typical questions you might ask yourself:

**When can I return to work? What types of work can I do?
What if I go back to work, and realize I am not able to perform
the same functions I once could? If I am receiving Social Security,
how will returning to work effect this? Are there services to help**

me ease into returning to work?

Many survivors want to return to work, whether full-time, part-time, or as a volunteer once their neurologist or neurosurgeon clears them. Others who have a longer recovery process may find returning to work impossible. In more severe cases, family members should devise a way to make the survivor feel fulfilled, whether creating “work-related” tasks at home, creating new businesses related to the illness, or working with organizations that hire people with severe disabilities.

If you decide to return to work, you might face some difficulty. Many people are unaware of the “background” deficits associated with brain trauma. Your employer may not understand that the expectations for returning 100 percent might be too high. It is important for you to be assessed by a neuropsychiatrist to determine any cognitive deficits. These deficits might include memory, organizational skills, language processing, concentration, and higher level thinking skills. All of these impact how you function at the workplace. There are cognitive therapists who can work with you to regain some functioning, as well as offer strategies for compensation. Talk to your doctor about being assessed if you find you are having some cognitive difficulties.

Many survivors rely on Social Security Disability Insurance (SSDI) benefits to sustain them. However, many survivors want to return to some level of work. SSDI allows you to work on a trial basis for up to nine months before taking your benefits away. SSDI also offers Vocational Rehabilitation programs to assist you with finding work suited to your special needs. If needed, physical aids can be provided, as well as a multitude of other job placement services. Contact your local office for more information.

Keys to Recovery

“The best thing about the future is that it only comes one day at a time.” Abraham Lincoln

One day at a time. How appropriate? To look too far ahead can be frustrating and disheartening. To look back too often can be



debilitating. Be assured that you will have good days and bad days, negative thoughts and positive thoughts, moments of peace and moments of utter chaos. Celebrate the good days, enjoy those peaceful moments of solitude and reflection, and write down those positive thoughts so you can remember. Healing and recovery is a long journey not a sprint.

One key to a promising recovery is to resume your responsibilities and activities gradually and with confidence. Although these responsibilities and activities might look different and take on a whole new meaning, they still allow you to feel like you are making progress and contributing to the success of your recovery. Ask yourself, **“What have I always wanted to do with my time? Are there interests that I want to pursue? How can I make this situation into a positive one that makes me feel good about myself?”**

The opportunity to talk with someone who has had the same surgery or experience can be both strengthening and encouraging. Healthcare providers involved with your care can put you in touch with other brain aneurysm survivors, who are at the same point in the recovery process or who have recovered and can share their experiences.

The Brain Aneurysm Foundation has an online support community which may be helpful to those in the recovery phase.

<http://www.bafoundsupport.org/>

“Celebrate endings for they precede new beginnings.”

Jonathan Lockwood Huie

Journaling

Brain aneurysm survivors are a rarity in this world representing a special group that has a lot to teach others. Survivors who keep a journal not only allow themselves the opportunity to purge feelings and develop inner peace about their illness, they also find that journaling is a good way to monitor progress of certain cognitive functions, like handwriting, language, and storytelling.

If you are unable to write, use a tape recorder or ask a friend or family member to be your scribe. This will be therapeutic for both of you. Other ways to express your feelings about your illness are through poetry, song, painting, and meditation. Expressing yourself is a key to your recovery.

“Start by doing what’s necessary; then do what’s possible; and suddenly you are doing the impossible.” St. Francis of Assisi

For more information on recovery, starting a support group or joining one, please visit The Brain Aneurysm Foundation website: www.bafound.org

Support Groups

Surviving a brain aneurysm rupture or being diagnosed with a brain aneurysm is a life-changing experience. Physically and psychologically, a brain aneurysm diagnosis or rupture can take its toll on both patients and their families. Recovery often requires considerable patience, ongoing love, and support. Survivors frequently need more help than they were previously used to or more than they may be willing to accept. Support is critical, and support groups are a part of this.

The first Brain Aneurysm Support Group was started by Deidre Buckley, RN, NP Clinical Coordinator for the Brain Aneurysm/AVM Center at Massachusetts General Hospital and co-founder of The Brain Aneurysm Foundation, in 1992. The group continues to meet monthly and provides patients and survivors with educational tools and emotional support needed to cope with this condition. The goal of support group meetings is to help alleviate fears and concerns through education and group discussions. Discussion topics include origin of brain aneurysms, treatment and prognosis, recovery and coping with the “new” you.

There are many additional Brain Aneurysm Support Groups around the country, and in Canada, and we constantly strive to establish more groups to reach more people. If you have an interest in organizing a support group in your area, The Brain Aneurysm Foundation will work with and assist you in that effort and post meeting schedules



and details on our website, www.bafound.org. Please contact office@bafound.org or 1(781) 826 5556 to learn more about starting a support group in your area.

Brain Aneurysm Online Support Community

The purpose of the Brain Aneurysm Support Community is to provide a forum for patients and their families affected by brain aneurysms to find support and share information online. The online support community for those affected by brain aneurysms at www.bafsupport.org continues to grow. It's a great place to share joys and concerns. The forum section allows members to ask questions or start a discussion about topics of interest to brain aneurysm survivors, their caretakers, and those who have lost someone to a brain aneurysm. Others choose to use the blog section to share their stories, their worries, and find comfort from others in the community. Some have formed their own groups: Living with an Aneurysm and Aneurysm and Migraines. Many members have posted photos of loved ones or of survivors enjoying life and family times.

The Brain Aneurysm Foundation has started a new Ask the Doctor forum within the support community, where neurosurgeons and nurse practitioners from our Medical Advisory Board are answering member's questions.

The Brain Aneurysm Foundation At-A-Glance

Our History

The Brain Aneurysm Foundation was established in Boston in 1994 as a public charity. The Foundation developed from a close relationship between patients and healthcare professionals who identified the need for comprehensive information and support for brain aneurysm patients, their families, and the medical community. The Brain Aneurysm Foundation is the nation's only nonprofit organization solely dedicated to providing critical awareness, education, support, and research funding to reduce the incidence of brain aneurysm ruptures.

Mission

To provide support and educational materials to the medical community, the newly diagnosed, survivors, family members, friends and the general public regarding the facts, treatment options, and recovery process for brain aneurysms. With the help of the medical community, remain steadfast and earnest in the pursuit of brain aneurysm research that can directly benefit those affected.

The Facts

Brain aneurysms are a silent killer because most show no symptoms over time. It is estimated that up to 1 in 50 people in the U.S. will develop a brain aneurysm during their lifetime. Due to the lack of awareness and research funding, the situation today is grim. Each year about 30,000 people will suffer a ruptured brain aneurysm. Almost half of the victims will die and of those surviving, only a third will recover without disabilities. While the vast majority of brain aneurysms occur in adults over 40, they can also strike children and young adults, often resulting in death.

The Brain Aneurysm Foundation Needs You!

There is hope. Research is being done today to save lives tomorrow. The Brain Aneurysm Foundation is funding essential research that can directly benefit those affected. The Brain Aneurysm Foundation funds basic scientific research directed at early detection, improved treatment modalities, and technological advances that will ultimately improve outcomes for patients with brain aneurysms.

We invite you to become part of our growing team with a personal or corporate contribution. We welcome resources and opportunities that support our mission and goals. Thanks for helping us to help others.

The Brain Aneurysm Foundation is the world's only nonprofit organization solely dedicated to providing critical awareness, education, support and research funding to reduce the incidence of brain aneurysm ruptures.

For more information visit: www.bafound.org

The Brain Aneurysm Foundation does not promote, endorse, or recommend any treatment that may be contained in this publication. Nor are the statements and opinions in this booklet necessarily those of The Brain Aneurysm Foundation.

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