World Stroke Organization

Preventing another stroke

A guide about secondary stroke prevention for stroke support organizations

Stroke Support Organization Topic Guide

- This guide is part of a series being developed to support the work of stroke support organizations (SSOs).
- As the global stroke organization, with a growing membership of SSOs, the World Stroke Organization has a role in collating evidence and best practice examples for its members.
- While this guide provides a lay summary of clinical evidence for managing the risk of stroke, it is intended to assist SSOs in their non-medical interventions to help support stroke survivors to manage risk of a further stroke.
- The guide also highlights where campaigning and advocacy by SSOs can influence societal factors that impact the prevention of further strokes.

Introduction

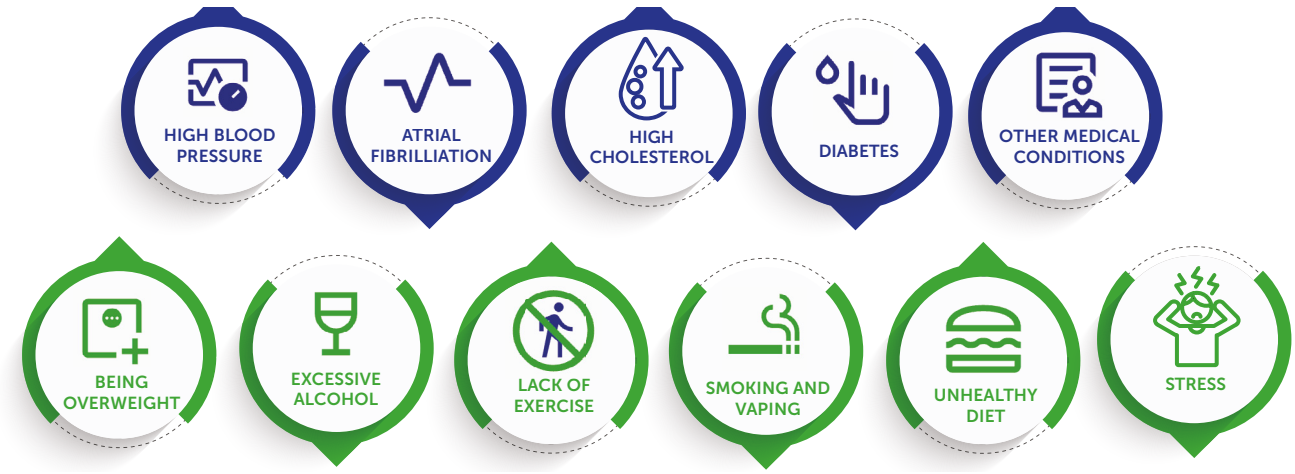
The World Health Organisation divides stroke prevention into three areas[1]:

- **Primordial stroke prevention** is concerned with reducing the risk of stroke before someone has acquired medical risk factors such as high blood pressure. Primordial prevention might include population measures to encourage healthier eating and exercise.
- **Primary prevention** entails identifying people who are at higher risk of stroke due to factors such as high blood pressure or diabetes.
- **Secondary prevention** aims to reduce the risk of having another stroke after someone has had a first stroke or transient ischemic attack (TIA).

Risk factors

The different risk factors for stroke can be divided into non-modifiable (risks we cannot change) and modifiable (risks that can be controlled).

- **Non-modifiable** risk factors are those that we cannot change and they include age, biological sex, ethnicity and genetic factors. Women have a higher lifetime risk of stroke than men. People with a close blood relative who has had a stroke have a higher risk of stroke. Strokes happen more often in people who are Black African or Caribbean, or South Asian[2,3].
- **Modifiable** risk factors are those that can be tackled through behaviours, including taking medications and changes in diet and levels of physical activity. Management of these risks can also be supported by changes in the external environment and government policy, including for example, increased availability of exercise spaces or salt reduction policies. These modifiable risk factors include the following medical conditions and behaviours:

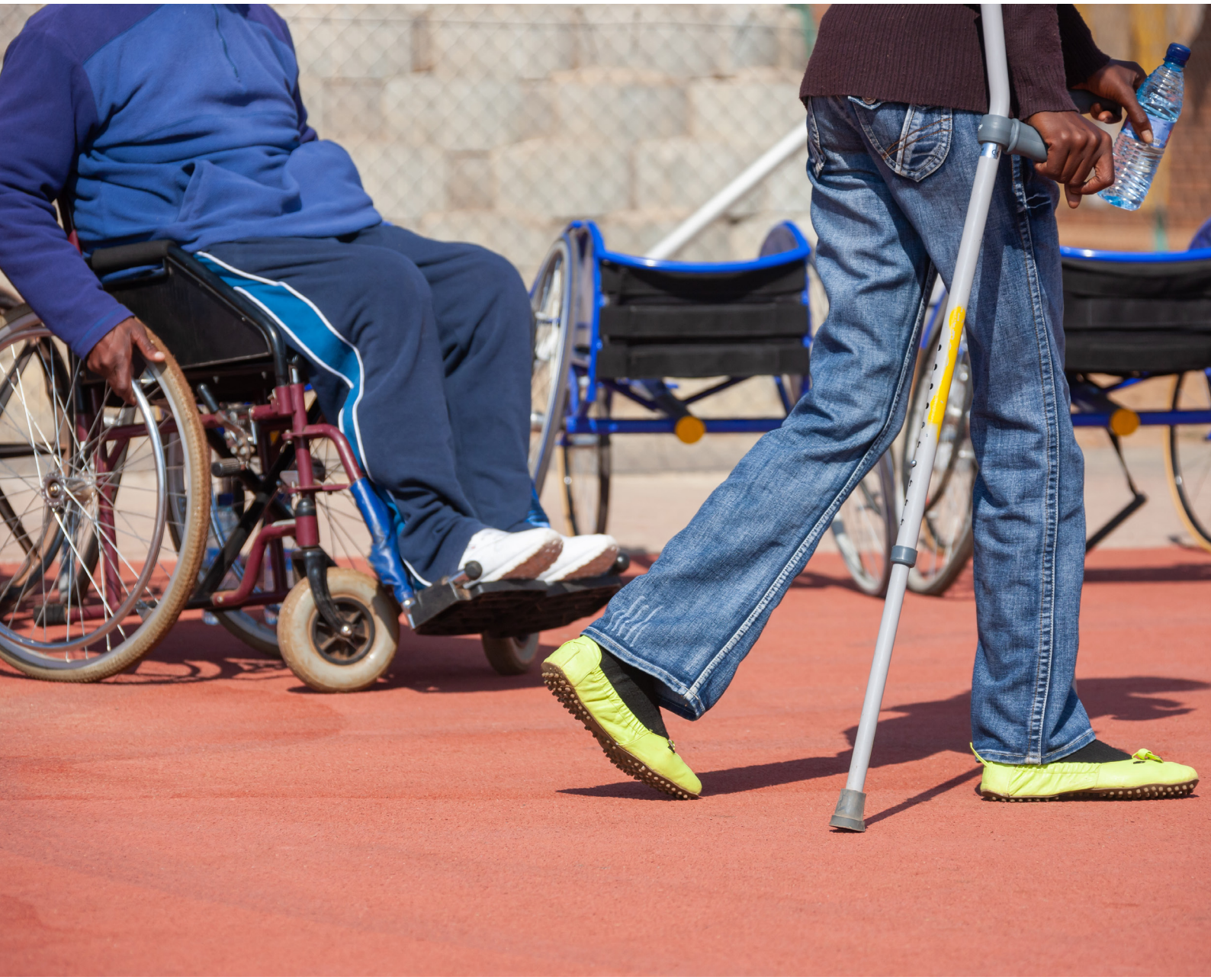


1. https://www.thelancet.com/pdfs/journals/laneur/PIIS1474-4422(23)00277-6.pdf
2. https://www.stroke.org/en/help-and-support/resource-library/lets-talk-about-stroke/risk-factors
3. https://www.stroke.org.uk/stroke/types/risk-factors

Risk of further strokes

About 20–30% of strokes occur in people who previously had a stroke or a transient ischaemic attack (TIA). People who have had a stroke or TIA are at much higher risk of having a second one. 2–3% of survivors of a first stroke have another stroke within the first 30 days, 9% in the first 6 months and 10–16% within a year. After a year the figure is 5%[4].

These recurrent strokes tend to be more disabling and to have poorer outcomes than the first stroke. Evidence suggests that 45–80% of recurrent strokes and TIAs could be prevented. In addition, stroke survivors are also at higher risk for heart attacks and premature death compared to their non-stroke age-matched peers[5].



4. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6891883
5. https://www.ahajournals.org/doi/epub/10.1161/STROKEAHA.121.037316

Medical conditions

It is vital that everyone who has a stroke or TIA has all the interventions and information needed to reduce their risk of a recurrent stroke. Most stroke survivors already have an underlying medical condition that increased their risk of stroke. These underlying conditions remain a risk after the first stroke event and must be treated. They are modifiable, so secondary prevention interventions can make a big difference.

People who have had a stroke should be given investigations to identify these risk factors and should have a plan for secondary stroke prevention, including access to regular monitoring, medication and support for behavioural change. Less common causes of stroke such as underlying heart conditions and blood disorders should be investigated for where appropriate and managed specifically.

Helping people understand the medical conditions that may have caused their stroke will help them to know how they can reduce the risk of a further stroke.

Ensuring stroke survivors have access to advice from health professionals is vital. The ways that SSOs can help stroke survivors access this advice include explaining the medical tests that can be done to identify conditions that are a risk for stroke, sharing contact information for clinics, accompanying stroke survivors to clinics and discussing ways to prevent another stroke in peer support groups.

High blood pressure[6]

A simple blood pressure check can determine whether a person has high blood pressure. A health professional will advise on whether the condition can be managed with lifestyle changes and/or the right medication. If a person is diagnosed with high blood pressure, they may be advised to take medicine, and it is very important to take it regularly.

Blood pressure is measured in millimetres of mercury (mm Hg). When measuring blood pressure two numbers known as systolic and diastolic pressure are recorded. Systolic pressure, the higher number, is a measure of the force with which blood is being pumped around the body. Diastolic pressure is the level of resistance to the blood flow in the body. Optimal blood pressure is less than 120 systolic/80 diastolic mm Hg.

Home monitoring of blood pressure for people with high blood pressure can help health professionals to know if medication is working and can be an important way for people to increase their understanding of their personal health. Home monitoring should not replace medical appointments and recommended monitors should be used. No changes in medication should be made without medical consultation[7].

High blood pressure is also linked to a number of lifestyle factors. Addressing these factors can help to prevent and to manage blood pressure and reduce the risk of stroke.

6. https://www.world-stroke.org/assets/downloads/STROKE_RISK_AND_PREVENTION_LEAFLET_-_HYPERTENSION-EN.pdf
7. https://www.heart.org/en/health-topics/high-blood-pressure/understanding-blood-pressure-readings/monitoring-your-blood-pressure-at-home

Atrial fibrillation[8]

Atrial fibrillation (also called AFib or AF) is a condition where the heartbeat is irregular and often very fast. It is very important to know about atrial fibrillation because, left untreated, it is a major risk factor for stroke due to the formation of blood clots in the heart's chambers. When the heart's rhythm is irregular, blood can pool in the atria, forming clots. If a clot dislodges and travels to the brain, it can block a blood vessel, causing an ischaemic stroke. A person with atrial fibrillation is five times more likely to have a stroke. With the right treatment the risk of AF related stroke can be reduced.

For many people AF is symptomless and is only detected by physical examination, or with an electrocardiogram (ECG). Other people may experience one or more of the following symptoms: general fatigue, rapid and irregular heartbeat, fluttering in the chest, dizziness or light-headedness, shortness of breath and anxiety. If AF is caused by an underlying condition, such as hyperthyroidism, treating that condition will often resolve the AF and no further treatment is required. If there is no underlying cause a doctor will consider medications that will help to restore the heart rhythm, control the heart rate and reduce stroke risk. People with AF who have a medium to high risk of stroke are usually prescribed a drug called an anticoagulant. Anticoagulants stop blood from clotting.

Some lifestyle changes will reduce the risk of AF and can help address other circulatory diseases.

High cholesterol[9]

More than half the people with elevated/ high blood pressure also have high cholesterol. Cholesterol is a fatty substance that circulates in the blood. Most of the cholesterol in the body is produced in the liver and is carried in the blood by proteins known as lipoproteins. There are two types of lipoprotein – low density lipoprotein (LDL) and high-density cholesterol (HDL). Stroke is linked to high levels of LDL cholesterol. LDL cholesterol is often called 'bad cholesterol' because if there is too much of it this builds up on artery walls and can cause problems with the circulatory system – this is what increases the risk of stroke. HDL cholesterol is also known as 'good cholesterol' because it helps carry bad cholesterol away from the blood cells and back to the liver, where it can be processed and removed from the body.

The only way to know if a person has high cholesterol is to have a blood test, this can be done by a pharmacist, doctor or nurse. Healthy levels will vary from person to person and the health professional will give advice on what an individual's levels should be.

For most people cholesterol levels are a result of what they eat. A diet that is high in saturated and trans-fats will increase the levels of LDL cholesterol and increase the risk of circulatory disease and stroke. Foods that are high in saturated and trans-fats include: cakes, deep fried foods, fatty meat and processed meat. If cholesterol cannot be managed by dietary change, taking medications to lower cholesterol, will help reduce stroke risk.

8. https://www.world-stroke.org/assets/downloads/STROKE_RISK_AND_PREVENTION_LEAFLET_-_ATRIAL_FIBRILLATION-EN.pdf
9. https://www.world-stroke.org/assets/downloads/STROKE_RISK_AND_PREVENTION_LEAFLET_CHOLESTEROL-EN.pdf

Diabetes

The World Health Organisation estimates that at least 420 million people have type 2 diabetes worldwide. In 2014, 8.5% of adults aged 18 years and older had diabetes. In 2019, diabetes was the direct cause of 1.5 million deaths and 48% of all deaths due to diabetes occurred before the age of 70 years[10].

When a person has diabetes their pancreas either stops producing insulin, or the insulin it produces does not work properly. The body uses insulin to convert the sugar (glucose) in the blood to energy. There are two types of diabetes – Type 1 and Type 2. Type 1 diabetes develops when the body stops producing insulin and glucose builds up in the bloodstream. Type 1 diabetes usually begins in childhood or adolescence. Type 2 diabetes develops when the body does not produce enough insulin or the body does not react to it in the right way. Type 2 diabetes is much more common than Type 1 and tends to develop in adulthood. Another kind of diabetes called gestational diabetes can affect pregnant women. It usually goes away after childbirth but can increase a woman's risk of developing Type 2 diabetes.

Diabetes contributes to hardening of the arteries (atherosclerosis), which increases the risk of blood clot or a ruptured blood vessel. People with diabetes are also likely to experience a number of additional stroke risk factors including obesity, poor diet, inactivity, high cholesterol.

Many people with Type 2 diabetes will not know they are diabetic as the condition usually gets worse over time. Diabetes is often identified through blood or urine tests.

Type 1 and Type 2 diabetes are lifelong conditions that can be managed with medication and/or lifestyle changes. Type 1 can be controlled with insulin injections. The most common drug treatment for Type 2 diabetes is metformin. Some people with Type 2 diabetes can reduce their blood sugar levels to normal level by changing their lifestyle, people who have been recently diagnosed and who lose weight are more likely to be able to achieve this[11].

10. https://www.who.int/news-room/fact-sheets/detail/diabetes
11. https://www.world-stroke.org/assets/downloads/STROKE_RISK_AND_PREVENTION_LEAFLET_DIABETES-EN.pdf

Lifestyle

Stroke survivors need specific advice and support for healthy lifestyle measures, such as diet considerations when there is swallowing limitations, and exercise and activity levels especially if they have been disabled by their stroke. Clinicians, medical practitioners and SSOs have a vital opportunity and role to play in supporting people to manage behaviours to reduce the risk of having another stroke. Regular post-stroke reviews and check-ups are very important, especially as many stroke survivors feel they do not get the support they need to stay healthy. Stroke survivors need to understand the way they can tackle the modifiable lifestyle risk factors they face.

Helping people understand lifestyle factors that cause stroke will help them to know how they can reduce the risk of a further stroke.

Ensuring stroke survivors have access to ongoing support, resources and opportunities to sustain lifestyle changes is crucial. The ways that SSOs can help stroke survivors manage lifestyle risk factors include running physical activities and facilitating peer support groups.

Being overweight

The World Health Organisation estimates that approximately 2.5 billion people are overweight and that 890 million are obese[12]. Being overweight or obese raises a person's risk of high blood pressure, heart disease and type 2 diabetes. It can lead to the arteries becoming narrowed and clogged up (atherosclerosis). Carrying too much weight, particularly around the middle, puts extra strain on the heart and other organs and increases the risk of high blood pressure and diabetes[13]. Being overweight is a risk factor for AF and contributes to diabetes, hypertension and sleep apnea, all of which increase the risk of AF[14].

Lack of exercise[15]

Just 30 minutes of exercise five times a week can reduce the risk of stroke by 25%. Exercise plays an important role in reducing several stroke risk factors including hypertension, diabetes, cholesterol, depression and stress.

Small everyday activities like walking instead of taking the car, taking the stairs instead of the elevator, gardening and housework will help people stay healthy and reduce their stroke risk.

For stroke survivors, regular exercise can reduce the risk of having another stroke, the risk of developing dementia, improve recovery, help with fatigue and improve general well-being. Even if a stroke survivor's mobility is affected by stroke, there is likely to be some kind of exercise that works for them. A physiotherapist or occupational therapist should be able to help find exercise that works for individual stroke survivors.

12. https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight
13. https://www.world-stroke.org/assets/downloads/STROKE_RISK_AND_PREVENTION_LEAFLET_-_HYPERTENSION-EN.pdf
14. https://www.world-stroke.org/assets/downloads/STROKE_RISK_AND_PREVENTION_LEAFLET_-_ATRIAL_FIBRILLATION-EN.pdf
15. https://www.world-stroke.org/assets/downloads/STROKE_RISK_AND_PREVENTION_LEAFLET-EXERCISE-EN.pdf

Unhealthy diet[16]

Processed foods contain higher levels of salt, fat and sugar which all contribute to high or elevated blood pressure as well as increasing the risk of obesity. Eating a healthy diet high in fruit and vegetables, wholegrains, healthy fats and low in salt can help to prevent and manage hypertension. Diets high in fat are associated with AF and contribute to atherosclerosis.

The best diet for stroke prevention is a diet that is mostly plant-based with small amounts of meat and fish. This diet has been described as a 'Mediterranean Diet' and there is a large body of evidence to support its benefits for cardiovascular health and stroke prevention. Using the same principles of this diet with locally available products will achieve the same result.

Excessive intake of salt, sugar and saturated fats are associated with increased risk of stroke. Salt increases blood pressure which is the single biggest risk factor for stroke. Sugar and sugary drinks are linked to stroke, obesity and diabetes which are both risk factors for stroke, so reducing consumption of these will help to reduce stroke risk.

16. https://www.world-stroke.org/assets/downloads/STROKE_RISK_AND_PREVENTION_LEAFLET_DIET-EN.pdf

Excessive alcohol[17]

Drinking too much alcohol can increase the risk of stroke. Regular and heavy use of alcohol is linked to stroke risks including high blood pressure, AF and diabetes. Alcohol can also interact with medications that a person has been prescribed. Globally, excessive alcohol consumption is linked to over one million strokes each year.

Avoiding alcohol or sticking to recommended consumption will reduce the risks. The upper daily limit is two units of alcohol for men and one unit of alcohol for women. An alcohol unit helps to measure and keep track of the alcohol being consumed. One unit is the equivalent 10ml of pure alcohol. Because different drinks have different levels of alcohol by volume (ABV) a single unit of alcohol is not the same thing as a single drink.

It is a good idea for people to track their alcohol intake and look at how and when they could reduce their intake. Strategies for alcohol intake reduction include having two to three consecutive alcohol-free days every week, replacing alcoholic drinks with low or no-alcohol alternatives and drinking smaller measures. If alcohol is being used to relax, finding alternative ways to manage stress will be beneficial, such as exercise.

Smoking and vaping[18]

Tobacco smoking temporarily increases blood pressure and contributes to damaged arteries, high blood pressure and stroke as well as a range of other diseases. Someone who smokes 20 cigarettes a day is six times more likely to have a stroke compared to a non-smoker.

Tobacco smoke contains thousands of harmful chemicals which are transferred from the lungs into the bloodstream. These chemicals change and damage cells and affect how the body works. These changes affect the circulatory system and increase the risk of stroke. Smoking can affect the body's cholesterol levels, it reduces the levels of 'good' HDL cholesterol and increases the levels of 'bad' LDL cholesterol. Smoke from cigarettes contains carbon monoxide and nicotine. Carbon monoxide reduces the amount of oxygen in the blood while nicotine makes the heart beat faster, raising blood pressure. The chemicals in tobacco smoke also make blood more prone to clotting. Together these effects of smoking increase the risk of developing atherosclerosis.

Even if someone is a long-term smoker, quitting will reduce their risk of stroke almost immediately. Within eight hours of quitting, blood oxygen levels will improve and carbon monoxide and nicotine levels in the body will go down by more than half. After two-12 weeks, the circulatory system will start to improve, after two years risk will reduce significantly and after five years risk is the same as non-smokers.

Nicotine is a highly addictive substance and can be hard to quit. Smoking also becomes a habit that people can find hard to stop. Getting specialist help to quit makes it four times more likely that someone will kick the habit. Because smoking is so harmful to public health, many governments and agencies have put in place programs to support people who want to quit.

17. https://www.world-stroke.org/assets/downloads/STROKE_RISK_AND_PREVENTION_LEAFLET-ALCOHOL-EN.pdf
18. https://www.world-stroke.org/assets/downloads/STROKE_RISK_AND_PREVENTION_LEAFLET_SMOKING-EN.pdf

Some of these programs provide access to personal support, online tools and nicotine replacement therapy. Talking to a doctor or pharmacist about local programs or looking online for services can help people to quit.

E-cigarettes and vaping devices which provide nicotine without the toxins found in tobacco smoke have increased in popularity in recent years. These are less harmful than smoking tobacco but are not without risk.

Stress[19]

Stress temporarily increases blood pressure, if high levels of stress are experienced on a regular basis this can damage the arteries over time increasing the risk of stroke and other diseases. Stress can also contribute to behaviours such as poor diet, physical inactivity and excessive alcohol consumption which will increase health risks.

Around one in six strokes are linked to mental health. Depression and stress are linked to almost two times greater risk of stroke and TIA particularly in adults who are middle-aged and older.

Stress causes the body to release hormones which are not harmful if the stress is short lived, however when the body experiences persistent stress these hormones can lead to hardening of arteries and blood vessels, this causes atherosclerosis. Depression has been linked to hypertension and AF, both as a cause and an effect.

Taking care of mental health will help reduce the risk of stroke. Talking to a health professional about therapies or medication can help people take care of their medical health. It is also very important that people take care of their physical health and take action on other stroke risk factors such as diet, exercise, smoking and alcohol. Taking steps to reduce these risks will lower the overall risk of stroke and some will also help to improve mental health. Exercise in particular will not only reduce the risk of stroke, it has also been proven to reduce stress and is as effective as anti-depressant medication for people with mild to moderate depression.

Links to the evidence and guidelines

- Global Stroke Guidelines and Action Plan: Secondary Stroke Prevention
- Lay summary of WSO and Lancet Neurology Commission – including pragmatic solutions for secondary prevention
- 2021 Guideline for the Prevention of Stroke in Patients With Stroke and Transient Ischemic Attack: A Guideline From the American Heart Association/American Stroke Association
- Canadian Stroke Best Practices: Secondary Prevention of Stroke
- Stroke Action Plan for Europe

19. https://www.world-stroke.org/assets/downloads/STROKE_RISK_AND_PREVENTION_LEAFLET_-_MENTAL_HEALTH-EN.pdf

How stroke support organizations can help prevent further strokes

Individual level

Helping stroke survivors manage their medical conditions

Stroke survivors and/or their carers need to understand what each medication is for and how to take them. Disability can make the process of obtaining, sorting and taking (often multiple) tablets much more challenging. Stroke survivors with cognitive impairments need to be supported to make sure they are getting medication. Regular post-stroke reviews are needed to check on these underlying conditions and to make sure the medications are still appropriate and are being taken.

SSOs can be helpful in supporting people to adhere to their medications, for example through information materials and peer support groups. These activities can assist people in understanding how medication is helping to manage their medical condition. SSOs can also support people in managing some of the challenges they may face in adhering to medication, for example by supplying pill boxes and daily planning ideas.

SSOs can help people to continue to attend medical appointments, for example by reminding people diagnosed with diabetes to continue to have regular blood sugar checks. SSOs can also facilitate group discussions that focus on different topics, such as diabetes, AF and high blood pressure. Peer support groups can be helpful to get insights and encouragement from people who are managing the same conditions.

In areas with under-developed health infrastructure, the use of primary care and allied health professionals as well as mobile phone apps that measure stroke risk, can be used to support stroke survivors to reduce their risk of a second stroke. Some SSOs have worked with health professionals to train non-medical community workers to deliver activities that support secondary prevention of stroke.

Helping stroke survivors with lifestyle changes

Stroke survivors need information and support to tackle behaviours that increase their risk of having another stroke. This may include help to give up smoking, dietary advice and exercise programs. SSOs can help people to manage their diet with activities such as cooking classes and providing recipes that are high in fibre and omega 3s. SSOs have an understanding of cultural and contextual considerations when supporting changes in diet, weight and physical activity. Understanding how to support behaviour change in different contexts is crucial in helping people to manage their risk of a first and recurrent stroke.

Cutting down on alcohol and giving up smoking can be difficult, SSOs and peer support groups can provide ongoing support and encouragement to people. SSOs can provide information in formats and languages that make this information accessible. SSOs can also provide tools and resources to help people track their alcohol intake. There may also be activity groups run by SSOs that help people manage their stress. SSOs may also provide support in helping people give up smoking. They can signpost to online tools and nicotine replacement therapy.

It may be overwhelming for some stroke survivors to think about getting physically active, or it may be difficult to find out about activities and groups that are available. SSOs can play an important role in sharing lists of activities and groups that are available and how to join them. SSOs and peer support groups may also play a role in encouraging stroke survivors who are not initially feeling confident to join groups. Many SSOs also have information and ideas about physical activities that can be done at home and advice on how to be active if people are managing issues such as incontinence and fatigue.

Societal level

There are also things that health and other governmental authorities need to do to reduce the chance of people having a first or second stroke. These include tackling pollution; improving access to affordable, healthy food; and making sure that people can get and can afford the right medicines.

SSOs can have an important role in making sure stroke survivors' secondary prevention needs are being met by health agencies and in the community. Secondary prevention is rare in low income countries and uncommon in middle-income countries. SSOs can advocate for: the use of risk assessment scores that take into account issues such as hypertension, age, diabetes and atrial fibrillation; assessment of biomedical and lifestyle risk factors; and patient/carer education about management of risk factors.

The context in which stroke survivors live impacts on their risk of having a second stroke. Low and middle-income countries struggle to gather information and data about stroke risk factors, the numbers of strokes and their impact. The affordability of healthy food, especially fresh vegetables and fruit; the availability and price of post-stroke medicines is also important. In many countries taxes and other disincentives are applied to discourage smoking, the consumption of excess sugar and fat, or the widespread availability of highly processed foods. Many SSOs carry out campaigns calling for changes in government policies on tobacco and alcohol control, salt reduction and the environment.

There is a large body of scientific evidence on climate change and the associated health impacts. Heat waves and increases in ambient temperature have been directly linked to increased stroke incidence and mortality. Increasing heat also enhances the negative effects of air pollution, one of the greatest risk factors of stroke[20].

Research and reports highlighting individual and societal factors

- Stroke Association UK Lived Experience
- Strategies to Reduce Racial and Ethnic Inequities in Stroke Preparedness, Care, Recovery, and Risk Factor Control: A Scientific Statement From the American Heart Association
- Stroke survivors' and family members' perspectives of multimodal lifestyle interventions for secondary prevention of stroke and transient ischemic attack
- Stroke survivors', caregivers' and nurse coaches' perspectives on health coaching program towards hospital-to-home transition care
- Medication-taking after stroke: a qualitative meta-synthesis of the perspectives of stroke survivors, informal carers and health professionals
- Medication adherence early after stroke: using the Perceptions and Practicalities Framework to explore stroke survivors', informal carers' and nurses' experiences of barriers and solutions
- The potential of wearable technology to support stroke survivors' motivation for home exercise
- Use of stroke secondary prevention services: are there disparities in care?
- Stroke Alliance for Europe: A life saved is a life worth living
- Socioeconomic Status and Stroke: An Updated Review

20. https://www.world-stroke.org/assets/downloads/WSO_Policy_Statement_on_Climate_Change_and_Stroke_v4_15-3-24_proofed.pdf

Spot Stroke Fast Foundation
Ghana

Since it was established, Spot Stroke Fast Foundation has become a leading stroke support organization in Ghana in the field of educating individuals and communities about the causes and prevention of stroke. The foundation aims to empower people with the knowledge and tools they need to reduce their risk of stroke and improve their overall health.

Spot Stroke Fast Foundation provides education in the community on the warning signs of stroke, risk factors such as high blood pressure, diabetes, and high cholesterol, and strategies for stroke prevention, including healthy eating and physical activity. The foundation works with healthcare providers and other organizations to deliver free health education and health screening events and organizes workshops for health personnel on stroke and its management.

The work of the foundation is having real impact and helping to address some of the challenges in managing risk factors. At a recent screening event one female participant was in hypertensive crisis. She knew she was hypertensive but had stopped taking medication for over a year as her health insurance had expired. The foundation took timely action and renewed her insurance, referred her to a nearby health facility for further management and offered guidance to her and her family.

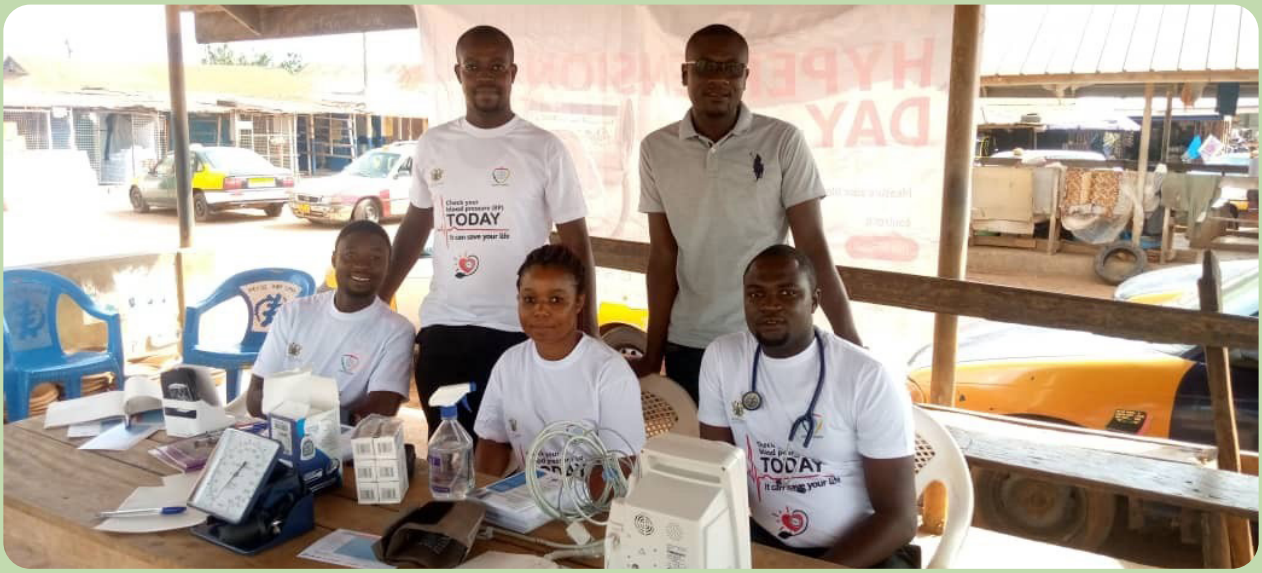


Image: Spot Stroke Fast Foundation Ghana

National Stroke Association Singapore

Developed by the Singapore Institute of Technology and Singapore General Hospital with partners including the Singapore National Stroke Association (SNSA) and National Neuroscience Institute, the MOTIVATE program aims to help stroke survivors lead active lives.

At its core MOTIVATE is a randomised controlled trial encouraging physical activity through behaviour change interventions. Co-designed with stroke survivors, caregivers, and healthcare professionals, the program addresses real challenges in staying active. Beyond research, MOTIVATE works with SNSA to enhance its website, providing stroke survivors with access to training materials, adaptive exercise equipment, and fitness tools, making exercise more accessible.

Program findings emphasized the need for public awareness, inclusive gyms and better transitions from hospital care to fitness centres. To support this, a multi-sector collaboration, funded by Singapore Institute of Technology and SNSA, launched a public awareness campaign showcasing stroke survivors thriving through sports.

The collaborating organizations have also introduced a training program for fitness instructors to better support stroke survivors in gyms. Singapore General Hospital and other hospitals are also improving exercise testing and transition programs to further assist in recovery. Through these efforts, MOTIVATE is transforming stroke recovery in Singapore, helping survivors not just recover, but thrive.

Stroke Alliance Jamaica

Cerebrovascular disease, which includes stroke, hypertension, and heart disease, is the leading cause of both morbidity and mortality in Jamaica, and is a policy priority within the Vision 2030 Jamaican National Development Plan. As such, the Jamaica Stroke Alliance was formed to help address this national priority. The alliance is passionate about preventing the occurrence of strokes and ensuring that when a stroke does occur, the individual can experience the optimal outcome.

The Jamaica Stroke Alliance's focus is on providing education and awareness on stroke prevention and the importance of seeking care quickly once someone has experienced a stroke. Other key activities are to advocate for strengthening of services for stroke treatment and care and support for those affected by a stroke. One activity it runs is the stroke support group.

Joy Tracy, a member of the group said, "sharing similar problems helps me to learn to live with the changes. I can share concerns with other stroke survivors who get it. I also welcome exercise tips to help me on my road to recovery."

Image: Stroke Alliance Jamaica

Associação Brasil AVC
Brazil

As part of its Fighting Stroke Campaign, Associação Brasil AVC highlights the importance of a healthy diet in helping to prevent strokes.

Associação Brasil AVC collaborates with ten restaurants to promote healthy eating. With the support of a nutritionist, restaurants in the city of Joinville plan special dishes or adjust their menus, encouraging eating practices that help prevent stroke.

The campaign highlights the evidence that a healthy diet can help, along with other factors, to prevent up to 90% of strokes. With stroke one of the leading causes of death and disability in Brazil, this is a necessary stroke awareness and prevention initiative. Each restaurant offers a dish related to the campaign, and this dish is kept on the menu for a year. The dishes are marked with the logo of the Fighting Stroke Campaign inside the menu.

Visitors to the Associação Brasil AVC website can search the menus of the participating restaurants. "Taking care of our diet, combined with regular physical activity, is the best thing we can do to achieve a healthy and long-lasting life", highlights Dr Carla Moro, Associação Brasil AVC Board member.

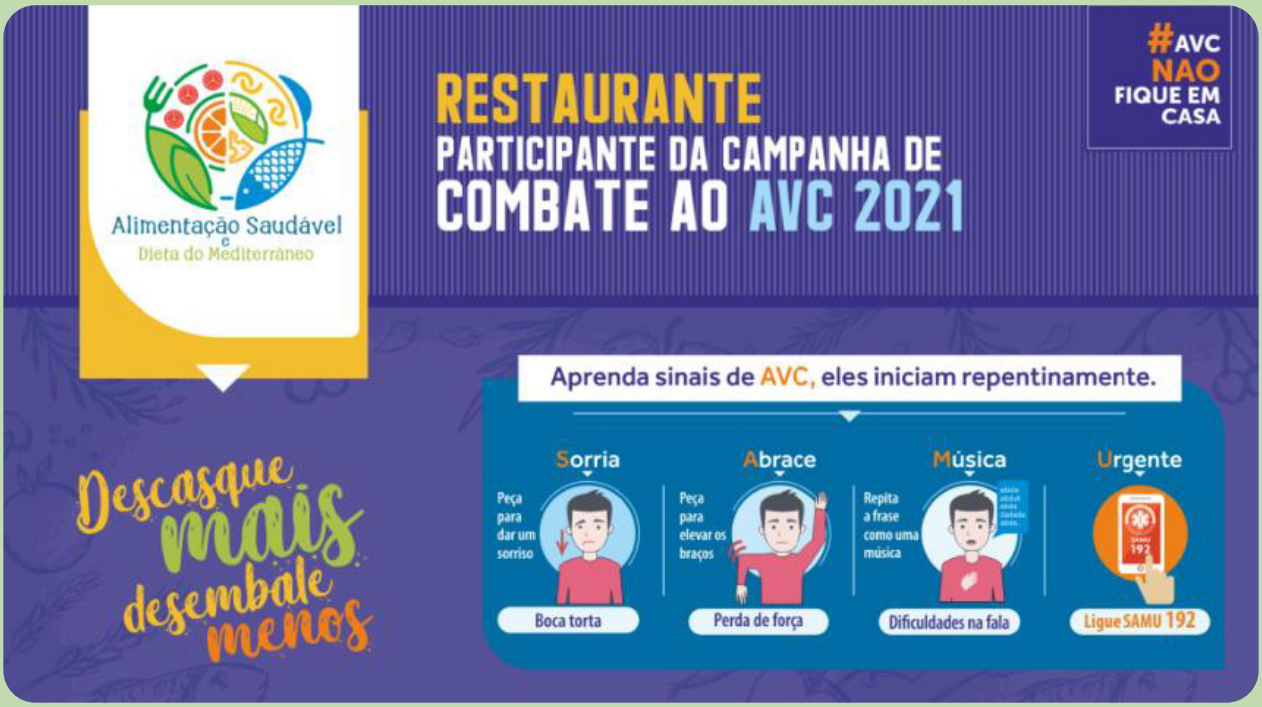


Image: Associação Brasil AVC

Takeaways

Activity	Summary	Role of stroke support organization
Multi-stakeholder approach	Clinicians, medical practitioners and stroke support organizations have a vital opportunity and role to play in supporting people to reduce their risk of having another stroke.	Many SSOs have long-term connections to stroke survivors in the community. These organizations can help to identify, highlight and respond to unmet needs of stroke survivors in managing their risk of another stroke.
Access to full and accurate information	It is vital that everyone who has a stroke or TIA has all the interventions and information needed to reduce their risk of a recurrent stroke.	SSOs can provide evidence based information for stroke survivors and carers, at times and in ways that meet their information needs.
Health policy to enable stroke prevention	There are things that health and other governmental authorities need to do to reduce the chance of people having a first or second stroke.	SSOs can have an important role in making sure stroke survivors secondary prevention needs are being met by health agencies and in the community.
Access to community based interventions	In areas with under-developed health infrastructure, the use of primary care and allied health professionals as well as mobile phone apps that measure stroke risk can be used to support stroke survivors to reduce their risk of a second stroke.	SSOs have an understanding of some of the barriers that stroke survivors may face in accessing medical interventions. Many organizations also develop context specific lifestyle interventions.

It is vital that everyone who has a stroke or TIA, wherever they live, has all the interventions, information and support needed to reduce their risk of a recurrent stroke.

A selection of WSO and stroke support organization resources

Associação Brasil AVC
http://abavc.org.br/wp-content/uploads/2019/04/folder_prevencao_e_cuidados_abavc.pdf

Different Strokes UK
https://differentstrokes.co.uk/online-exercise-for-stroke/

Fundacio Ictus Catalonia
https://www.fundacioictus.com/projectes/programa-abric/

Heart and Stroke Canada
https://www.heartandstroke.ca/healthy-living
https://www.heartandstroke.ca/-/media/pdf-files/canada/yourstroke-journey/en-your-stroke-journey-v20.ashx

Heart and Stroke Foundation South Africa
https://heartfoundation.co.za/healthy-living/

March of Dimes Canada
https://www.youtube.com/watch?v=6Cxy_RUq7Nk

Singapore National Stroke Association
https://www.snsasg.org/getactive

Stroke Alliance for Europe
https://strokeprevention.info

Stroke Association UK
https://www.stroke.org/en/life-after-stroke/preventing-another-stroke

Stroke Foundation Australia
https://irebound.enableme.org.au/
https://strokefoundation.org.au/what-we-do/prevention-programs/living-well-after-stroke
https://strokefoundation.org.au/about-stroke/prevent-stroke

World Stroke Campaign
https://www.world-stroke.org/world-stroke-day-campaign/prevent-stroke

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