Practical Information

Swiss Working Group of Cerebrovascular Diseases
Dr Roman Sztajzel
Hôpitaux universitaires de Genève
Rue Gabrielle-Perret-Gentil 4
1211 Genève 14
022 372 83 10

Swiss Cardiology Foundation
Schwarzerstrasse 18
3000 Bern 14
031 388 80 80
www.swissheart.ch

FRAGILE Switzerland
Association for people with brain lesions
Rue du Bugnon 18
1005 Lausanne
021 329 02 30
www.fragile.ch

Association France AVC
Allée la Grosse Pierre 34
F-74940 Annecy-le-Vieux
+33 450 23 37 57
www.franceavc.com
Franceavc74@orange.fr

Association genevoise des aphasiques (AGEVA)
Dany Hersperger
Case postale 143, 1258 Perly
022 759 19 36
edecuyper@agence84.ch

Communauté suisse de travail pour l’aphasie
Habsburgerstrasse 20
6003 Lucerne
041 240 05 83
www.aphasie.org
info@aphasie.org

Institution genevoise de maintien à domicile (imad)
Av. du Cardinal-Mermillod 36
Case postale 1731
1227 Carouge
022 420 20 20

Clinical nurse specialising in rehabilitation care
Sandrine Jonnaux
Hôpitaux universitaires de Genève
Rue Gabrielle-Perret-Gentil 4
1211 Genève 14
079 553 32 99

Centre de ressources pour personnes cérébrolésées
Rue du Val Vert 18
F-74600 Seynod
+33 450 33 08 90
centreressources.74@gmail.com

Informational videos
CVAs
http://tinyurl.com/AccidentVasculaireCerebral
Rehabilitation after a stroke
http://tinyurl.com/ReeducationAVC
Symptoms and warning signs of a stroke
http://tinyurl.com/SymptomesAVC

Strokes
Answers to your Questions
Table of contents

Illness and Hospitalisation

Introduction 3
What is a CVA and What is a TIA? 4
What is a CVA?
What is a TIA?
What are the Warning Signs?

Diagnosis and Treatment 6
How to Diagnose a CVA or a TIA?
Complementary Examinations
What is the Appropriate Treatment?

A Team of Specialists 8
Neurovascular Unit

Your Day at the Hospital 9
Rehabilitation and Recovery
Diet and Nutrition
Elimination
Mobilisation
Communication
Emotions
Family

Returning Home 14

You Also Need to Know 15
The Risk Factors
The Different Causes of Strokes 20
Glossary 22
Practical Information 24

Neurologist
Doctor specializing in diseases of the brain and of the nervous system.

Neuropsychologist
Psychologist specializing in the central nervous system which affects the way we think, perceive and behave. He/she performs an assessment and recommends a recovery strategy.

Re-education
Program of activities to restore the normal use of a body function or limb.

Rehabilitation
All the activities which promote the recovery of the body functions affected by the stroke in order to find the best possible autonomy.

Spasticity
Involuntary increase of the muscle tone. This contraction creates a resistance to movement.

Swallowing
Action of swallowing.

TIA
Transient ischemic attack, neurological deficit which lasts in general less than an hour, and with absence of visible lesions to the x-ray examination (MRI of the brain).

Urinary incontinence
The inability to control the bladder which is causing urinary leaks.

Impressum
This booklet, tested on patients, was made by Sandrine Jonniaux, nurse specialising in rehabilitation care, and by Dr Roman Sztajzel, Assistant Professor, head of the Stroke Centre, in collaboration with the multidisciplinary Neurovascular team and HUG’s Groupe d’Information pour Patients et Proches (GIPP). Cover design: Simon Tschopp
If you have had a cerebrovascular accident (CVA) or a transient ischemic attack (TIA), this brochure is for you. It explains the various stages of your medical care upon your arrival in the emergency room.

This booklet addresses both the CVA and the TIA since they share the same warning signs, as well as a mechanism of occurrence, and identical risk factors.

However, rehabilitation during the acute phase while in the hospital only applies to you if you have sequelae following your stroke.

You will receive advice sheets on cardiovascular risks if necessary during interviews with the healthcare team in order to complete the information contained in this brochure. Do not hesitate to share this booklet with your loved ones and, if you have any questions, to address them to the healthcare team.

You are invited to test your knowledge on the disease by completing the attached questionnaire. A nurse will go through the answers with you to clarify the issues still unclear.

**Glossary**

**Aphasia**
Difficulty to speak, express oneself, read, write or understand what others are saying.

**Apraxia**
Difficulty to voluntarily perform already learned movements.

**Ataxia**
Difficulties to coordinate one’s movements.

**Autonomy**
Ability to perform one’s daily activities.

**Cerebral ischemia**
Lesion of the brain tissue caused by a poor blood supply.

**CVA**
Cerebrovascular accident (also called cerebral apoplexy or cerebral infarction) is the interruption of blood supply to the brain. The nerve cells in the affected area receive too little or no oxygen at all. They are damaged and die if the blood flow is not restored within minutes.

**Daily activities**
The daily life activities such as feeding, eliminating, moving, walking, washing, caring for oneself, etc.

**Diplopia**
Double vision.

**Dysarthria**
Difficulties to form or articulate words.

**Dysphagia**
Difficulty swallowing.

**Hemianopsia**
Loss of vision in half of the visual field, meaning that the person sees half of the image.

**Hemineglect**
Loss of consciousness of one half of the body or of a part of the space (as if it did not exist).

**Hemiparesis**
Weakness on one side of the body.

**Hemiplegia**
Paralysis of one side of the body.
What is a CVA and What is a TIA?

What is a CVA?
It is a sudden disruption of the blood flow to the brain, meaning the flow of blood which provides it oxygen. In 80% of the cases, the cerebrovascular accident (CVA) is the result of a blood vessel which is obstructed by a blood clot (ischemic stroke). Less frequently (20% of the cases), it is caused by the rupture of a vessel, which is called cerebral haemorrhage (haemorrhagic stroke).

A CVA is also called a “cerebral attack”, or even a “cerebral infarction”. In the case of a CVA, the symptoms persist and a brain injury is visible most often upon a radiological examination (scanner, magnetic resonance imaging).

What is a TIA?
The Transient Ischemic Attack (TIA) is caused, such as the ischemic CVA, by the presence of a blood clot that transitionally obstructs the cerebral blood flow. In the case of a TIA, the symptoms usually last less than an hour and no brain injury is visible upon the radiological examinations.

Aortic or Vertebral Artery Dissections
They are also one of the causes of a CVA, especially in young patients. These are tears of a wall: a hematoma forms in the vessel that clogs and causes a stroke. Very often, these dissections manifest through pain on the back of the neck and, as a general rule, are followed by the occurrence of a stroke in a few days. Anticoagulant therapy is prescribed (Sintrom®). During the first few days, it is also recommended that you wear a collar to avoid the sudden movements of the back of the neck.

The Foramen Ovale
This small orifice, which is located at the level of the wall separating the two atria (the chambers of the heart), normally closes at birth. However, in 25% of people, the foramen ovale does not close and sometimes causes strokes in young patients. It appears that when a clot forms in a vein (for example, thrombosis in one leg), it then migrates to the brain through the foramen ovale. The contributory factors are the same as for venous thrombosis (travel by plane, prolonged bed rest, oral contraception, history of thrombosis in the family).

In this case, it is recommended, following a discussion within a multidisciplinary meeting, to percutaneously close this passage (through cardiac catheterisation).

Unknown Origin
No cause was identified despite all the examinations which were carried out. Other additional examinations are therefore required.

The warning signs described below evoke a cerebral attack even if they disappear in a few minutes. They are to be taken seriously and urgent hospitalisation is required.
Call 144 immediately: an ambulance will safely and quickly transport you to the hospital for the initiation of an early treatment.

A follow-up out-patient consultation within three months is recommended in any case.
What are the Warning Signs?
The beginning of a CVA or of a TIA is brutal: the signs most often appear in just a few seconds or a few minutes, and more rarely in a few hours. The CVA causes disorders that vary depending on the region of the brain that is affected:

**Motor (hemiplegia) and sensitive disorders:** muscle weakness of one side of the body (face, arm, leg), feeling of numbness.

**Language and speech disorders:** inability to find one’s words and understand even simple questions, word articulation problems, incomprehensible sentences.

**Vision problems:** brief loss of sight in one eye, double image.

**Balance disorders and dizziness:** feelings of being on a boat.

**Unusual, persistent headaches which are not responding to pain treatment.**

These difficulties can be transient or, on the contrary, persist according to the extent of the injury and the period of clogging of the blood vessels.

The Different Causes of Strokes

The CVA may have various causes and requires an appropriate treatment:

**The Large Blood Vessel Disease**
It causes the narrowing of the main arteries which supply blood to the brain. They are caused by cholesterol plaques that can break, form clots, and migrate to the brain. The arteries the most often affected are the carotid or vertebral arteries (at the neck level). Occasionally, the narrowing occurs at the level of the vessels that are inside the brain.

In the majority of the cases, the treatment is based on medications that thin the blood (such as aspirin) and that lower the cholesterol (statins). A follow-up ultrasound exam is provided. In case of risk of recurrence or major narrowing, surgery or possibly stenting (a small cylinder also used on the heart’s arteries) may also be considered.

**The Small Blood Vessel Disease**
It leads to obstructions at the level of all the small vessels of the brain. They represent the main factors of a stroke, sometimes without you even realise it, and are visible upon a MRI. In the majority of the cases, the treatment is based on medications that thin the blood (such as aspirin) and that lower the cholesterol (statins).

As arterial hypertension is often the main cause of this disease, an anti-hypertensive treatment is often provided.

The small vessels disease is accompanied in some cases by an artery rupture which results in a cerebral hemorrhage.

**Cardiac Embolism**
It often causes a stroke and frequently results in atrial fibrillation. This form of abnormal heart rhythm may go unnoticed (there are no symptoms). A preventive treatment with a anticoagulant drug (Sintron®) is then prescribed.

Tip +
When a stroke occurs, every minute counts, because the faster the treatment is initiated, the better the chances of recovery.
How to Diagnose a CVA or a TIA?
In the Emergency Care Unit, the neurologist, the brain specialist, prescribes several examinations to determine the cause of the cerebral attack and to locate the affected area.

**Scanner:** this examination, a kind of an X-ray of the brain, confirms if you have had a cerebral vascular accident. It indicates the type of stroke you have suffered: an ischemic stroke caused by a blood clot or a hemorrhagic stroke (cerebral hemorrhage) caused by bleeding.

**Complementary Examinations**

**Doppler Ultrasound:** during this examination, ultrasound are used to measure the speed with which the blood flows, and this allows to see if an artery is narrowed. The carotid Doppler shows the arteries in the neck (carotids) and the transcranial Doppler shows those located in the brain.

**Echocardiography:** this examination performed using ultrasound shows the contours and the inside of the heart. A probe (a sensor) is moved across the surface of the chest, and the image is reproduced on the computer.

**The holter or the R-Test:** this exam is performed to record the activity of your heart for a total period of 24 hours (respectively for 7 days for the R-Test) to detect cardiac rhythm disorders. A small box connected to electrodes is placed on your chest for 24 hours and you write on a sheet your activities (walking, meals, sleep, etc.).

**Neuropsychological examination:** a neuropsychologist evaluates your language, your understanding and your memory abilities through tests (drawings, writing) to clarify your achievement and offers you a tailored rehabilitation program. These tests last an average of two hours and are repeated in order to monitor the evolution of the case.

**The MRI (magnetic resonance imaging):** it uses a magnetic field system to create sectional images on all space plans. This allows to differentiate the “abnormal” tissues.

Sleep Apnea Syndrome
More than 50% of people who have had a stroke also suffer from the sleep apnea syndrome. It manifests by permanent snoring and is accompanied by respiratory pauses and movements of the body, most often described by the spouse. The resumption of breathing is loud. This syndrome is favoured by fatigue, weight gain, age and enlarge tonsils.

Repeated apnea causes a decrease in blood oxygenation. This decrease causes has serious repercussions on health as it favours the development of high blood pressure, and this increases the risk of a stroke. The diagnosis of the apnea syndrome is made by recording the respiratory functions during sleep.

What you can do

- Consult your physician so that he performs a review to determine whether you are indeed suffering from the sleep apnea syndrome.
- Adopt a conservative treatment: lose weight if you are overweight, sleep on one side, avoid drinking alcohol or taking sedatives at night.
- Try a mechanical treatment: a Continuous Positive Airway Pressure device (CPAP), or a mandibular advancement device.
- Choose maxillofacial surgery.
The MRI also detects small lesions and helps refining the diagnosis.

**What is the Appropriate Treatment?**

Monitoring of the vital functions (oxygen, blood pressure, body temperature) and of the neurological functions (examination of the language, strength, and sensitivity) is immediately established. Treatment adapted to your case is then initiated according to the origin of the cerebral vascular accident and its causes.

**Thrombolysis** consists in injecting a powerful drug into a vein or artery in order to dissolve the clot which is clogging one of your vessels. This treatment is only possible within the first six hours after the beginning of the symptoms and depending on your condition.

**Thrombectomy** is the extraction of the blood clot clogging a vessel inside the brain. This procedure requires the introduction of a catheter in the groin area, which is then guided up to the clogged artery. The clot is then extracted using a stent (a small cylinder often used to unblock the coronary arteries) that holds it in its mesh. The stent is then removed.

**Medicines** such as platelet inhibitors which prevent the formation of blood clots (aspirin for example) or anticoagulants (heparin, Sintrom®) are also administered as the case may be.

Depending on your needs and your risk factors, the healthcare team will be providing you advice at the end of your hospital stay or during your rehabilitation treatment. The treatment started during your hospitalisation must be continued on a long term in order to optimize your chances of recovery, and should not, under any circumstance, be interrupted without the advice of your attending physician.

---

**Overweight**
Excess body weight increases blood pressure. In addition, it increases the risk of excess cholesterol, and of diabetes.

**Contraceptive Pills**
Oral contraceptives may increase the risk of stroke, especially if it is associated with smoking, hypertension or migraines, and with being overweight. In most instances, it refers to thrombosis occurring at the level of brain veins.

**What you can do**
- Stop smoking.
- Lose weight.
- Consider using another method of contraception.
- Check the other risk factors.

**Heart Problems**
Certain heart diseases, such as cardiac arrhythmias, heart attacks or valvular lesions, can be the cause of a cerebrovascular accident. In fact, they favour the formation of blood clots.

**What you can do**
- Decrease either one of your risk factors.
- Follow the treatment recommended by the physician.
- See the doctor for the slightest problem: when you are having palpitations, pain in the chest (especially when exercising), difficulty in breathing.

Overweight
Excess body weight increases blood pressure. In addition, it increases the risk of excess cholesterol, and of diabetes.

Contraceptive Pills
Oral contraceptives may increase the risk of stroke, especially if it is associated with smoking, hypertension or migraines, and with being overweight. In most instances, it refers to thrombosis occurring at the level of brain veins.

**What you can do**
- Stop smoking.
- Lose weight.
- Consider using another method of contraception.
- Check the other risk factors.

Heart Problems
Certain heart diseases, such as cardiac arrhythmias, heart attacks or valvular lesions, can be the cause of a cerebrovascular accident. In fact, they favour the formation of blood clots.

**What you can do**
- Decrease either one of your risk factors.
- Follow the treatment recommended by the physician.
- See the doctor for the slightest problem: when you are having palpitations, pain in the chest (especially when exercising), difficulty in breathing.
Neurovascular Unit
After your arrival in the Emergency Care Unit, you will be transferred to the Neurovascular Unit, where several specialists work closely together to optimally organise your rehabilitation. Your treatment is regularly adjusted by physicians. They can meet with your family by appointment.

Assistance for your hygiene and comfort care is provided by nurses and the orderlies on a 27 hours basis. They are the ones who welcome you in the care unit and assist you according to your possibilities and your lifestyle. They make sure the drug treatments are applied and control the evolution of your medical condition and physiological parameters.

A nurse specialising in rehabilitative care may also intervene, if you or your loved ones feel the need to be given more assistance, or if you experience difficulties in respect to the image you have of yourself (hemiplegia, deficit, disability).

The social worker helps you choose a rehabilitation centre or set up the rest of your treatment (housekeeping help, home care, etc.).

The physiotherapist focuses on your engagement and your comfort: positioning, respiratory therapy, learning how to move, re-education on walking.

The occupational therapist performs assessments (motor, sensitivity and autonomy in your everyday life). He/she provides and adapts the auxiliary equipment (wheelchair, brace, etc.). He/she assesses whether your place of living requires any arrangements.

The neuropsychologist assesses your abilities of comprehension, expression and follows your evolution.

If necessary, the logopaedist intervenes for the rehabilitation of the speech, language, or swallowing.

Overconsumption of Alcohol
The excess alcohol increases the blood pressure and also the risk of a stroke. In addition, alcohol disrupts the production of the liver coagulation factors and increases the risk of a hemorrhagic stroke.

What you can do
- If you are a woman, limit your daily consumption to 2 drinks (wine, beer, etc.).
- If you are a man, limit your daily consumption to 3 drinks (wine, beer, etc.).
- You can’t do it by yourself? Talk to the nurse or the doctor. Get help from specialists: HUGs’ addiction unit, call 022 372 95 37.

Stress
Stress speeds up the heart rate and thus the blood pressure. Moreover, it favours smoking, alcohol consumption and weight gain. It therefore also represents a risk factor for vascular diseases.

Sedentary Lifestyle
The lack of exercise increases the risk of coronary heart disease, diabetes, or colon cancer. It also decreases the level of good cholesterol that has a protective effect. On the contrary, exercise keeps the heart pumping, promotes a good blood circulation, and activates the metabolism.
Rehabilitation begins as soon as your medical condition allows it. It depends on the importance of your damages (hemiplegia, hemiparesis, memory problems, difficulty swallowing, etc.) and increases in intensity as your condition improves.

It begins in the Neurology Unit and can continue, if necessary, in a rehabilitation centre. It aims the restoration and/or maintenance of your autonomy, that is of your ability to manage all the tasks of everyday life.

Your participation and your motivation are very important to achieve the goals set for your rehabilitation. These are discussed and developed together with you. Do not hesitate to ask questions and ask the help of the team throughout the successive stages that you complete.

According to the brain damage, the sequelae are more or less important. They may be mobility and sensory related, and they can also affect the balance, coordination, vision, and memory. Problems of language, understanding and difficulties in articulating are also possible. These deficiencies are sometimes temporary or then slowly regress. This period may last several months. All available means are being implemented to promote your recovery.

Diet and Nutrition
If you can eat and drink effortlessly, just adapt your meals to your taste (indicate to the nurse the foods you don’t like). You may experience difficulties in eating (difficulties chewing or swallowing). In this case, a meal of a different texture (chopped, mixed food) is offered. The recovery of swallowing evolves differently depending on the lesion. A dietician is available to determine together with you the most appropriate food.

Your Day at the Hospital

Rehabilitation and Recovery
Rehabilitation begins as soon as your medical condition allows it. It depends on the importance of your damages (hemiplegia, hemiparesis, memory problems, difficulty swallowing, etc.) and increases in intensity as your condition improves.

It begins in the Neurology Unit and can continue, if necessary, in a rehabilitation centre. It aims the restoration and/or maintenance of your autonomy, that is of your ability to manage all the tasks of everyday life.

Your participation and your motivation are very important to achieve the goals set for your rehabilitation. These are discussed and developed together with you. Do not hesitate to ask questions and ask the help of the team throughout the successive stages that you complete.

According to the brain damage, the sequelae are more or less important. They may be mobility and sensory related, and they can also affect the balance, coordination, vision, and memory. Problems of language, understanding and difficulties in articulating are also possible. These deficiencies are sometimes temporary or then slowly regress. This period may last several months. All available means are being implemented to promote your recovery.

Diet and Nutrition
If you can eat and drink effortlessly, just adapt your meals to your taste (indicate to the nurse the foods you don’t like). You may experience difficulties in eating (difficulties chewing or swallowing). In this case, a meal of a different texture (chopped, mixed food) is offered. The recovery of swallowing evolves differently depending on the lesion. A dietician is available to determine together with you the most appropriate food.
Elimination
The stroke, following brain damage, can cause difficulties urinating. As a general rule, the rehabilitation provides a good recovery. If you have a urinary catheter installed, it will be removed as soon as possible. Constipation, due to bed rest, can appear at the beginning of hospitalisation.

Tips for a Better Diet

□ Make yourself comfortable, in a seated position, back straight, head straight or slightly leaning forward.
□ Take little food at a time, by placing the food on the best side of the mouth and tongue.
□ Eat slowly and don’t speak at the same time.
□ Remain seated for a moment after your meal.

You Also Need to Know
The Risk Factors

The aging of the vessels and heredity play a role in the occurrence of a stroke. However, more than half of the cases are due to atherosclerosis (also called arteriosclerosis). This disease, which affects the large and small arteries, progresses slowly. The age and the hereditary predisposition are two risk factors that you cannot change. However, you can decrease the following factors.

High Blood Pressure
Arterial hypertension is the main risk factor of a stroke. When the arterial walls are constantly subjected to a high pressure of the blood flow, they harden and thicken. Furthermore, under the effect of the blood pressure, the vessels’ walls weaken and this may cause bleeding (hemorrhagic stroke).

One has arterial hypertension when the upper value (systolic) of the tension is equal to or greater than 140 mm Hg (millimetres of mercury), or the lower value (diastolic) is equal to or greater than 90 mm Hg after repeated measures.

Did you know?
Atherosclerosis is characterised by the accumulation of substances (mostly fats) on the wall of the arteries which then form plaques reducing the diameter of the blood vessels and therefore of the blood flow.

What you can do

□ Regularly check your blood pressure to detect a possible arterial hypertension (especially pregnant women and those taking oral contraceptives).
□ Lose a few pounds if you are overweight.
□ Eat less salt by replacing it with spices.
□ Keep to a minimum your alcohol consumption.
□ Practice physical activities on a regular basis.
□ Incorporate moments of rest and relaxation in your life.
Returning Home

Returning home may seem complicated. Rest, physical therapy and occupational therapy (sometimes speech therapy) will help you make progress, such as patience and the presence of your loved ones.

Do not hesitate to call the Institution genevoise de maintien à domicile (imad) or other associations (see page 24) that are in contact with people who have had a stroke or who are experiencing the same difficulties in their recovery.

Call 144

If you feel again symptoms such as
- mobility and sensory disorders
- language and speech disorders
- vision problems
- balance problems and dizziness
- unusual headaches,
you should take these warning signs seriously.

Call 144 immediately: an ambulance will quickly take you to the hospital, because the sooner the treatment is started, the best your chances of recovery.

Tips for Better Urination

- Drink according to the medical prescription, preferably throughout the day.
- Monitor your stools. Ask the nurse for a laxative if you feel you need it.
- Keep a urinal or a pan nearby.

Mobilisation

The mobilization is to move a limb, a joint. It takes place upon arrival in the unit with frequent changes of positions, a proper sitting in the bed. As a general rule, you will be able to progressively get up after 48 hours.

With the help of physiotherapists, occupational therapists and other healthcare professionals, a learning process then begins whose main goal is the maximum recovery of lost or damaged functions. This rehabilitation will last for several weeks depending on the degree of damage.

The recovery of the muscle strength and balance varies from one person to another. The sensitivity can be decreased and pain is sometimes present. Much of the recovery occurs more often during the months following the stroke.

Before the end of your hospital stay, if necessary, an occupational therapist will perform, after having it discussed with you, a visit to your home to assess the facilities to be installed. It is a good opportunity for you and your loved ones to inquire about the help for which you qualify.
If stroke lesions are located on the left side of the brain, you may suffer from disorders of language which manifest by difficulties of expression - such as difficulty articulating (dysarthria) or speaking (aphasia) - understanding, writing, reading.

A logopaedist evaluates your communication skills and helps you recover damaged functions, if the case may be. It helps to maintain and stimulate existing functions and introduce another ways to communicate.

**Communication**

- Take your time to speak.
- Use short sentences.
- Use gestures to make yourself understood.
- Talk to one person at a time in order to facilitate the conversation.

**Tips for Better Communication**

- Follow the instructions given by the healthcare team (bed rest, do not stand up by yourself, etc.).
- Make sure to have a good position in your bed and in your chair. If you do not feel comfortable, ask the team for help. Use the equipment at your disposal (cushion, wheelchair).
- Touch and massage the affected upper limb to stimulate it.
- Check the temperature of water or food with the not affected hand.

**Emotions**

You are going through a difficult time and your emotional reactions are also changed by the brain damage. This can translate into increased aggression or irritability, crying, or mood swings which are occurring without an apparent reason.

These normal effects can be added to your concerns about your physical appearance or your future ability to regain a normal life and a fulfilling sex life. Rest assured, an adjustment period is necessary, and your perceptions will change as your rehabilitation progresses.

**Tips to Better Manage Your Emotions**

- Share your emotions. All emotions are acceptable and verbalising them can help you.
- Open up to others, ask for help.

**Family**

The occurrence of stroke, the hospitalisation and the rehabilitation are difficult times for you and your loved ones. The recovery requires a lot of physical effort and courage. Most people find if in themselves and in their family the strength they need to adapt to these changes. The healthcare teams are also there for your loved ones who need it.

**Did you know?**

In the brain, the two hemispheres are involved in different mental functions. In addition, each hemisphere is connected to the opposite part of the body: if something touches the left side of your body, the information will go to the right brain, and if you catch a thing with your right hand, the order comes from the left brain.
**Communication**

If stroke lesions are located on the left side of the brain, you may suffer from disorders of language which manifest by difficulties of expression - such as difficulty articulating (dysarthria) or speaking (aphasia) - understanding, writing, reading.

A logopaedist evaluates your communication skills and helps you recover damaged functions, if the case may be. It helps to maintain and stimulate existing functions and introduce another ways to communicate.

**Tips for Better Communication**

- Take your time to speak.
- Use short sentences.
- Use gestures to make yourself understood.
- Talk to one person at a time in order to facilitate the conversation.

**Tips for Better Movement**

- Follow the instructions given by the healthcare team (bed rest, do not stand up by yourself, etc.).
- Make sure to have a good position in your bed and in your chair. If you do not feel comfortable, ask the team for help. Use the equipment at your disposal (cushion, wheelchair).
- Touch and massage the affected upper limb to stimulate it.
- Check the temperature of water or food with the not affected hand.

**Emotions**

You are going through a difficult time and your emotional reactions are also changed by the brain damage. This can translate into increased aggression or irritability, crying, or mood swings which are occurring without an apparent reason.

These normal effects can be added to your concerns about your physical appearance or your future ability to regain a normal life and a fulfilling sex life. Rest assured, an adjustment period is necessary, and your perceptions will change as your rehabilitation progresses.

**Tips to Better Manage Your Emotions**

- Share your emotions. All emotions are acceptable and verbalising them can help you.
- Open up to others, ask for help.

**Family**

The occurrence of stroke, the hospitalisation and the rehabilitation are difficult times for you and your loved ones. The recovery requires a lot of physical effort and courage. Most people find if in themselves and in their family the strength they need to adapt to these changes. The healthcare teams are also there for your loved ones who need it.

**Did you know?**

In the brain, the two hemispheres are involved in different mental functions. In addition, each hemisphere is connected to the opposite part of the body: if something touches the left side of your body, the information will go to the right brain, and if you catch a thing with your right hand, the order comes from the left brain.
Mobilisation

The mobilization is to move a limb, a joint. It takes place upon arrival in the unit with frequent changes of positions, a proper sitting in the bed. As a general rule, you will be able to progressively get up after 48 hours.

With the help of physiotherapists, occupational therapists and other healthcare professionals, a learning process then begins whose main goal is the maximum recovery of lost or damaged functions. This rehabilitation will last for several weeks depending on the degree of damage.

The recovery of the muscle strength and balance varies from one person to another. The sensitivity can be decreased and pain is sometimes present. Much of the recovery occurs more often during the months following the stroke.

Before the end of your hospital stay, if necessary, an occupational therapist will perform, after having it discussed with you, a visit to your home to assess the facilities to be installed. It is a good opportunity for you and your loved ones to inquire about the help for which you qualify.

Tips for Better Urination

- Drink according to the medical prescription, preferably throughout the day.
- Monitor your stools. Ask the nurse for a laxative if you feel you need it.
- Keep a urinal or a pan nearby.

Returning Home

Returning home may seem complicated. Rest, physical therapy and occupational therapy (sometimes speech therapy) will help you make progress, such as patience and the presence of your loved ones.

Do not hesitate to call the *Institution genevoise de maintien à domicile (imad)* or other associations (see page 24) that are in contact with people who have had a stroke or who are experiencing the same difficulties in their recovery.

Call 144

If you feel again symptoms such as
- mobility and sensory disorders
- language and speech disorders
- vision problems
- balance problems and dizziness
- unusual headaches,
you should take these warning signs seriously.

Call 144 immediately: an ambulance will quickly take you to the hospital, because the sooner the treatment is started, the best your chances of recovery.

Returning Home

Call 144

If you feel again symptoms such as
- mobility and sensory disorders
- language and speech disorders
- vision problems
- balance problems and dizziness
- unusual headaches,
you should take these warning signs seriously.

Call 144 immediately: an ambulance will quickly take you to the hospital, because the sooner the treatment is started, the best your chances of recovery.

Mobilisation

The mobilization is to move a limb, a joint. It takes place upon arrival in the unit with frequent changes of positions, a proper sitting in the bed. As a general rule, you will be able to progressively get up after 48 hours.

With the help of physiotherapists, occupational therapists and other healthcare professionals, a learning process then begins whose main goal is the maximum recovery of lost or damaged functions. This rehabilitation will last for several weeks depending on the degree of damage.

The recovery of the muscle strength and balance varies from one person to another. The sensitivity can be decreased and pain is sometimes present. Much of the recovery occurs more often during the months following the stroke.

Before the end of your hospital stay, if necessary, an occupational therapist will perform, after having it discussed with you, a visit to your home to assess the facilities to be installed. It is a good opportunity for you and your loved ones to inquire about the help for which you qualify.
Elimination

The stroke, following brain damage, can cause difficulties urinating. As a general rule, the rehabilitation provides a good recovery. If you have a urinary catheter installed, it will be removed as soon as possible. As soon as possible, you will return to feeding by mouth.

Tips for a Better Diet

☐ Make yourself comfortable, in a seated position, back straight, head straight or slightly leaning forward.
☐ Take little food at a time, by placing the food on the best side of the mouth and tongue.
☐ Eat slowly and don’t speak at the same time.
☐ Remain seated for a moment after your meal.

Constipation, due to bed rest, can appear at the beginning of hospitalisation.

You Also Need to Know

The Risk Factors

The aging of the vessels and heredity play a role in the occurrence of a stroke. However, more than half of the cases are due to atherosclerosis (also called arteriosclerosis). This disease, which affects the large and small arteries, progresses slowly. The age and the hereditary predisposition are two risk factors that you cannot change. However, you can decrease the following factors.

High Blood Pressure

Arterial hypertension is the main risk factor of a stroke. When the arterial walls are constantly subjected to a high pressure of the blood flow, they harden and thicken. Furthermore, under the effect of the blood pressure, the vessels’ walls weaken and this may cause bleeding (hemorrhagic stroke).

One has arterial hypertension when the upper value (systolic) of the tension is equal to or greater than 140 mm Hg (millimetres of mercury), or the lower value (diastolic) is equal to or greater than 90 mm Hg after repeated measures.

What you can do

☐ Regularly check your blood pressure to detect a possible arterial hypertension (especially pregnant women and those taking oral contraceptives).
☐ Lose a few pounds if you are overweight.
☐ Eat less salt by replacing it with spices.
☐ Keep to a minimum your alcohol consumption.
☐ Practice physical activities on a regular basis.
☐ Incorporate moments of rest and relaxation in your life.

Did you know?

Atherosclerosis is characterised by the accumulation of substances (mostly fats) on the wall of the arteries which then form plaques reducing the diameter of the blood vessels and therefore of the blood flow.
Rehabilitation and Recovery
Rehabilitation begins as soon as your medical condition allows it. It depends on the importance of your damages (hemiplegia, hemiparesis, memory problems, difficulty swallowing, etc.) and increases in intensity as your condition improves.

It begins in the Neurology Unit and can continue, if necessary, in a rehabilitation centre. It aims the restoration and/or maintenance of your autonomy, that is of your ability to manage all the tasks of everyday life.

Your participation and your motivation are very important to achieve the goals set for your rehabilitation. These are discussed and developed together with you. Do not hesitate to ask questions and ask the help of the team throughout the successive stages that you complete.

According to the brain damage, the sequelae are more or less important. They may be mobility and sensory related, and they can also affect the balance, coordination, vision, and memory. Problems of language, understanding and difficulties in articulating are also possible. These deficiencies are sometimes temporary or then slowly regress. This period may last several months. All available means are being implemented to promote your recovery.

Diet and Nutrition
If you can eat and drink effortlessly, just adapt your meals to your taste (indicate to the nurse the foods you don’t like).

You may experience difficulties in eating (difficulties chewing or swallowing). In this case, a meal of a different texture (chopped, mixed food) is offered. The recovery of swallowing evolves differently depending on the lesion. A dietician is available to determine together with you the most appropriate food.

Your Day at the Hospital

Smoking
Because smoking impairs the oxygenation of the body organs and of the vascular walls, it promotes atherosclerosis and, therefore, the stroke. Three to five years after quitting smoking (depending on the number of cigarettes smoked), the risk of stroke is similar to that of a non-smoker.

You can’t do it by yourself? Get help from the team during your hospitalisation or ask a healthcare professional to contact our specialist in tobacco control. After your admission, call 022 372 95 37 to make an appointment with the tobacco control specialists.

Cholesterol
A natural and vital component of our body, the good cholesterol (or the HDL cholesterol) has a protective effect on the blood vessels. Bad cholesterol (or the LDL cholesterol) gradually builds up on the walls of the vessels and promotes arteriosclerosis.

In order to adjust your eating habits, the HUG’s dieticians will provide you advice. If this is not enough, your physician will prescribe a drug which lowers the level of lipids in the blood.

Diabetes
Diabetes is caused by a hormone deficiency, the insulin, which is necessary so that the sugar content in the blood nourishes the cells. When there is little insulin, sugar (glycemia) in the blood increases, eventually resulting in fats metabolism disorders and vascular lesions.
A Team of Specialists

Neurovascular Unit

After your arrival in the Emergency Care Unit, you will be transferred to the Neurovascular Unit, where several specialists work closely together to optimally organise your rehabilitation. Your treatment is regularly adjusted by physicians. They can meet with your family by appointment.

Assistance for your hygiene and comfort care is provided by nurses and the orderlies on a 27 hours basis. They are the ones who welcome you in the care unit and assist you according to your possibilities and your lifestyle. They make sure the drug treatments are applied and control the evolution of your medical condition and physiological parameters.

A nurse specialising in rehabilitative care may also intervene, if you or your loved ones feel the need to be given more assistance, or if you experience difficulties in respect to the image you have of yourself (hemiplegia, deficit, disability).

The social worker helps you choose a rehabilitation centre or set up the rest of your treatment (housekeeping help, home care, etc.).

The physiotherapist focuses on your engagement and your comfort: positioning, respiratory therapy, learning how to move, re-education on walking.

The occupational therapist performs assessments (motor, sensitivity and autonomy in your everyday life). He/she provides and adapts the auxiliary equipment (wheelchair, brace, etc.). He/she assesses whether your place of living requires any arrangements.

The neuropsychologist assesses your abilities of comprehension, expression and follows your evolution.

If necessary, the logopaedist intervenes for the rehabilitation of the speech, language, or swallowing.

Overconsumption of Alcohol

The excess alcohol increases the blood pressure and also the risk of a stroke. In addition, alcohol disrupts the production of the liver coagulation factors and increases the risk of a hemorrhagic stroke.

What you can do

- If you are a woman, limit your daily consumption to 2 drinks (wine, beer, etc.).
- If you are a man, limit your daily consumption to 3 drinks (wine, beer, etc.).
- You can’t do it by yourself? Talk to the nurse or the doctor. Get help from specialists: HUGs’ addiction unit, call 022 372 95 37.

Tip +

Sugar level can be measured in the blood (glycaemia) or in the urine (glycosuria). Glycated hemoglobin is useful as it reflects your sugar level for the last three months.

Stress

Stress speeds up the heart rate and thus the blood pressure. Moreover, it favours smoking, alcohol consumption and weight gain. It therefore also represents a risk factor for vascular diseases.

Sedentary Lifestyle

The lack of exercise increases the risk of coronary heart disease, diabetes, or colon cancer. It also decreases the level of good cholesterol that has a protective effect. On the contrary, exercise keeps the heart pumping, promotes a good blood circulation, and activates the metabolism.
The MRI also detects small lesions and helps refining the diagnosis.

**What is the Appropriate Treatment?**
Monitoring of the vital functions (oxygen, blood pressure, body temperature) and of the neurological functions (examination of the language, strength, and sensitivity) is immediately established. Treatment adapted to your case is then initiated according to the origin of the cerebral vascular accident and its causes.

**Thrombolysis** consists in injecting a powerful drug into a vein or artery in order to dissolve the clot which is clogging one of your vessels. This treatment is only possible within the first six hours after the beginning of the symptoms and depending on your condition.

**Thrombectomy** is the extraction of the blood clot clogging a vessel inside the brain. This procedure requires the introduction of a catheter in the groin area, which is then guided up to the clogged artery. The clot is then extracted using a stent (a small cylinder often used to unblock the coronary arteries) that holds it in its mesh. The stent is then removed.

**Medicines** such as platelet inhibitors which prevent the formation of blood clots (aspirin for example) or anticoagulants (heparin, Sintrom®) are also administered as the case may be.

Depending on your needs and your risk factors, the healthcare team will be providing you advice at the end of your hospital stay or during your rehabilitation treatment. The treatment started during your hospitalisation must be continued on a long term in order to optimize your chances of recovery, and should not, under any circumstance, be interrupted without the advice of your attending physician.

---

**Overweight**
Excess body weight increases blood pressure. In addition, it increases the risk of excess cholesterol, and of diabetes.

**Contraceptive Pills**
Oral contraceptives may increase the risk of stroke, especially if it is associated with smoking, hypertension or migraines, and with being overweight. In most instances, it refers to thrombosis occurring at the level of brain veins.

**What you can do**
- Stop smoking.
- Lose weight.
- Consider using another method of contraception.
- Check the other risk factors.

**Heart Problems**
Certain heart diseases, such as cardiac arrhythmias, heart attacks or valvular lesions, can be the cause of a cerebrovascular accident. In fact, they favour the formation of blood clots.

**What you can do**
- Decrease either one of your risk factors.
- Follow the treatment recommended by the physician.
- See the doctor for the slightest problem: when you are having palpitations, pain in the chest (especially when exercising), difficulty in breathing.

---

**Contraceptive Pills**
Oral contraceptives may increase the risk of stroke, especially if it is associated with smoking, hypertension or migraines, and with being overweight. In most instances, it refers to thrombosis occurring at the level of brain veins.

**What you can do**
- Stop smoking.
- Lose weight.
- Consider using another method of contraception.
- Check the other risk factors.

**Heart Problems**
Certain heart diseases, such as cardiac arrhythmias, heart attacks or valvular lesions, can be the cause of a cerebrovascular accident. In fact, they favour the formation of blood clots.

**What you can do**
- Decrease either one of your risk factors.
- Follow the treatment recommended by the physician.
- See the doctor for the slightest problem: when you are having palpitations, pain in the chest (especially when exercising), difficulty in breathing.
Diagnosis and Treatment

How to Diagnose a CVA or a TIA?
In the Emergency Care Unit, the neurologist, the brain specialist, prescribes several examinations to determine the cause of the cerebral attack and to locate the affected area.

Scanner: this examination, a kind of an X-ray of the brain, confirms if you have had a cerebral vascular accident. It indicates the type of stroke you have suffered: an ischemic stroke caused by a blood clot or a hemorrhagic stroke (cerebral hemorrhage) caused by bleeding.

Complementary Examinations
Doppler Ultrasound: during this examination, ultrasound are used to measure the speed with which the blood flows, and this allows to see if an artery is narrowed. The carotid Doppler shows the arteries in the neck (carotids) and the transcranial Doppler shows those located in the brain.

Echocardiography: this examination performed using ultrasound shows the contours and the inside of the heart. A probe (a sensor) is moved across the surface of the chest, and the image is reproduced on the computer.

The holter or the R-Test: this exam is performed to record the activity of your heart for a total period of 24 hours (respectively for 7 days for the R-Test) to detect cardiac rhythm disorders. A small box connected to electrodes is placed on your chest for 24 hours and you write on a sheet your activities (walking, meals, sleep, etc.).

Neuropsychological examination: a neuropsychologist evaluates your language, your understanding and your memory abilities through tests (drawings, writing) to clarify your achievement and offers you a tailored rehabilitation program. These tests last an average of two hours and are repeated in order to monitor the evolution of the case.

The MRI (magnetic resonance imaging): it uses a magnetic field system to create sectional images on all space plans. This allows to differentiate the “abnormal” tissues.

Sleep Apnea Syndrome
More than 50% of people who have had a stroke also suffer from the sleep apnea syndrome. It manifests by permanent snoring and is accompanied by respiratory pauses and movements of the body, most often described by the spouse. The resumption of breathing is loud. This syndrome is favoured by fatigue, weight gain, age and enlarge tonsils.

Repeated apnea causes a decrease in blood oxygenation. This decrease causes has serious repercussions on health as it favours the development of high blood pressure, and this increases the risk of a stroke. The diagnosis of the apnea syndrome is made by recording the respiratory functions during sleep.

What you can do
- Consult your physician so that he performs a review to determine whether you are indeed suffering from the sleep apnea syndrome.
- Adopt a conservative treatment: lose weight if you are overweight, sleep on one side, avoid drinking alcohol or taking sedatives at night.
- Try a mechanical treatment: a Continuous Positive Airway Pressure device (CPAP), or a mandibular advancement device.
- Choose maxillofacial surgery.
The Different Causes of Strokes

The CVA may have various causes and requires an appropriate treatment:

**The Large Blood Vessel Disease**
It causes the narrowing of the main arteries which supply blood to the brain. They are caused by cholesterol plaques that can break, form clots, and migrate to the brain. The arteries the most often affected are the carotid or vertebral arteries (at the neck level). Occasionally, the narrowing occurs at the level of the vessels that are inside the brain.

In the majority of the cases, the treatment is based on medications that thin the blood (such as aspirin) and that lower the cholesterol (statins). A follow-up ultrasound exam is provided. In case of risk of recurrence or major narrowing, surgery or possibly stenting (a small cylinder also used on the heart’s arteries) may also be considered.

**The Small Blood Vessel Disease**
It leads to obstructions at the level of all the small vessels of the brain. They represent the main factors of a stroke, sometimes without you even realise it, and are visible upon a MRI. In the majority of the cases, the treatment is based on medications that thin the blood (such as aspirin) and that lower the cholesterol (statins).

As arterial hypertension is often the main cause of this disease, an anti-hypertensive treatment is often provided.

The small vessels disease is accompanied in some cases by an artery rupture which results in a cerebral hemorrhage.

**Cardiac Embolism**
It often causes a stroke and frequently results in atrial fibrillation. This form of abnormal heart rhythm may go unnoticed (there are no symptoms). A preventive treatment with an anticoagulant drug (Sintrom®) is then prescribed.

---

### What are the Warning Signs?

The beginning of a CVA or of a TIA is brutal: the signs most often appear in just a few seconds or a few minutes, and more rarely in a few hours. The CVA causes disorders that vary depending on the region of the brain that is affected:

- **Motor (hemiplegia) and sensitive disorders:** muscle weakness of one side of the body (face, arm, leg), feeling of numbness.
- **Language and speech disorders:** inability to find one’s words and understand even simple questions, word articulation problems, incomprehensible sentences.
- **Vision problems:** brief loss of sight in one eye, double image.
- **Balance disorders and dizziness:** feelings of being on a boat.
- **Unusual, persistent headaches which are not responding to pain treatment.**

**Tip +**

When a stroke occurs, every minute counts, because the faster the treatment is initiated, the better the chances of recovery.
What is a CVA and What is a TIA?

**What is a CVA?**
It is a sudden disruption of the blood flow to the brain, meaning the flow of blood which provides it oxygen. In 80% of the cases, the cerebrovascular accident (CVA) is the result of a blood vessel which is obstructed by a blood clot (ischemic stroke). Less frequently (20% of the cases), it is caused by the rupture of a vessel, which is called cerebral haemorrhage (haemorrhagic stroke).

A CVA is also called a “cerebral attack”, or even a “cerebral infarction”. In the case of a CVA, the symptoms persist and a brain injury is visible most often upon a radiological examination (scanner, magnetic resonance imaging).

**What is a TIA?**
The Transient Ischemic Attack (TIA) is caused, such as the ischemic CVA, by the presence of a blood clot that transitionally obstructs the cerebral blood flow. In the case of a TIA, the symptoms usually last less than an hour and no brain injury is visible upon the radiological examinations.

---

**Aortic or Vertebral Artery Dissections**
They are also one of the causes of a CVA, especially in young patients. These are tears of a wall: a hematoma forms in the vessel that clogs and causes a stroke. Very often, these dissections manifest through pain on the back of the neck and, as a general rule, are followed by the occurrence of a stroke in a few days. Anticoagulant therapy is prescribed (Sintrom®). During the first few days, it is also recommended that you wear a collar to avoid the sudden movements of the back of the neck.

**The Foramen Ovale**
This small orifice, which is located at the level of the wall separating the two atria (the chambers of the heart), normally closes at birth. However, in 25% of people, the foramen ovale does not close and sometimes causes strokes in young patients. It appears that when a clot forms in a vein (for example, thrombosis in one leg), it then migrates to the brain through the foramen ovale. The contributory factors are the same as for venous thrombosis (travel by plane, prolonged bed rest, oral contraception, history of thrombosis in the family).

In this case, it is recommended, following a discussion within a multidisciplinary meeting, to percutaneously close this passage (through cardiac catheterisation).

**Unknown Origin**
No cause was identified despite all the examinations which were carried out. Other additional examinations are therefore required.

---

The warning signs described below evoke a cerebral attack even if they disappear in a few minutes. They are to be taken seriously and urgent hospitalisation is required.

Call 144 immediately: an ambulance will safely and quickly transport you to the hospital for the initiation of an early treatment.

A follow-up out-patient consultation within three months is recommended in any case.
If you have had a cerebrovascular accident (CVA) or a transient ischemic attack (TIA), this brochure is for you. It explains the various stages of your medical care upon your arrival in the emergency room.

This booklet addresses both the CVA and the TIA since they share the same warning signs, as well as a mechanism of occurrence, and identical risk factors.

However, rehabilitation during the acute phase while in the hospital only applies to you if you have sequelae following your stroke.

You will receive advice sheets on cardiovascular risks if necessary during interviews with the healthcare team in order to complete the information contained in this brochure. Do not hesitate to share this booklet with your loved ones and, if you have any questions, to address them to the healthcare team.

You are invited to test your knowledge on the disease by completing the attached questionnaire. A nurse will go through the answers with you to clarify the issues still unclear.

### Glossary

- **Aphasia**
  Difficulty to speak, express oneself, read, write or understand what others are saying.

- **Apraxia**
  Difficulty to voluntarily perform already learned movements.

- **Ataxia**
  Difficulties to coordinate one’s movements.

- **Autonomy**
  Ability to perform your one’s daily activities.

- **Cerebral ischemia**
  Lesion of the brain tissue caused by a poor blood supply.

- **CVA**
  Cerebrovascular accident (also called cerebral apoplexy or cerebral infarction) is the interruption of blood supply to the brain. The nerve cells in the affected area receive too little or no oxygen at all. They are damaged and die if the blood flow is not restored within minutes.

- **Daily activities**
  The daily life activities such as feeding, eliminating, moving, walking, washing, caring for oneself, etc.

- **Diplopia**
  Double vision.

- **Dysarthria**
  Difficulties to form or articulate words.

- **Dysphagia**
  Difficulty swallowing.

- **Hemianopsia**
  Loss of vision in half of the visual field, meaning that the person sees half of the image.

- **Hemineglect**
  Loss of consciousness of one half of the body or of a part of the space (as if it did not exist).

- **Hemiparesis**
  Weakness on one side of the body.

- **Hemiplegia**
  Paralysis of one side of the body.
Table of contents

Illness and Hospitalisation

Introduction 3
What is a CVA and What is a TIA? 4
What is a CVA? What is a TIA? What are the Warning Signs?

Diagnosis and Treatment 6
How to Diagnose a CVA or a TIA? Complementary Examinations What is the Appropriate Treatment?

A Team of Specialists 8
Neurovascular Unit

Your Day at the Hospital 9
Rehabilitation and Recovery Diet and Nutrition Elimination Mobilisation Communication Emotions Family

Returning Home 14

You Also Need to Know 15
The Risk Factors
The Different Causes of Strokes 20
Glossary 22
Practical Information 24

Neurologist
Doctor specializing in diseases of the brain and of the nervous system.

Neuropsychologist
Psychologist specializing in the central nervous system which affects the way we think, perceive and behave. He/she performs an assessment and recommends a recovery strategy.

Re-education
Program of activities to restore the normal use of a body function or limb.

Rehabilitation
All the activities which promote the recovery of the body functions affected by the stroke in order to find the best possible autonomy.

Spasticity
Involuntary increase of the muscle tone. This contraction creates a resistance to movement.

Swallowing
Action of swallowing.

TIA
Transient ischemic attack, neurological deficit which lasts in general less than an hour, and with absence of visible lesions to the x-ray examination (MRI of the brain).

Urinary incontinence
The inability to control the bladder which is causing urinary leaks.

Impressum
This booklet, tested on patients, was made by Sandrine Jonniaux, nurse specializing in rehabilitation care, and by Dr Roman Sztajzel, Assistant Professor, head of the Stroke Centre, in collaboration with the multidisciplinary Neurovascular team and HUG’s Groupe d’Information pour Patients et Proches (GIPP). Cover design: Simon Tschopp
Practical Information

Swiss Working Group of Cerebrovascular Diseases
Dr Roman Sztajzel
Hôpitaux universitaires de Genève
Rue Gabrielle-Perret-Gentil 4
1211 Genève 14
022 372 83 10

Swiss Cardiology Foundation
Schwarztorstrasse 18
3000 Bern 14
031 388 80 80
www.swissheart.ch

FRAGILE Switzerland
Association for people with brain lesions
Rue du Bugnon 18
1005 Lausanne
021 329 02 30
www.fragile.ch

Association France AVC
Allée la Grosse Pierre 34
F-74940 Annecy-le-Vieux
+33 450 23 37 57
www.franceavc.com
Franceavc74@orange.fr

Association genevoise des aphasiques (AGEVA)
Dany Hersperger
Case postale 143
1258 Perly
022 759 19 36
edecuyper@agence84.ch

Communauté suisse de travail pour l’aphasie
Habsburgerstrasse 20
6003 Lucerne
041 240 05 83
www.aphasie.org
info@aphasie.org

Institution genevoise de maintien à domicile (imad)
Av. du Cardinal-Mermillod 36
Case postale 1731
1227 Carouge
022 420 20 20

Clinical nurse specialising in rehabilitation care
Sandrine Jonniaux
Hôpitaux universitaires de Genève
Rue Gabrielle-Perret-Gentil 4
1211 Genève 14
079 553 32 99

Centre de ressources pour personnes cérébrolésées
Rue du Val Vert 18
F-74600 Seynod
+33 450 33 08 90
centerressources.74@gmail.com

Informational videos
CVAs
http://tinyurl.com/AccidentVasculaireCerebral
Rehabilitation after a stroke
http://tinyurl.com/ReeducationAVC
Symptoms and warning signs of a stroke
http://tinyurl.com/SymptomesAVC

Strokes
Answers to your Questions