INTRODUCTION

Out shopping with his wife one afternoon, Nimal felt a slight weakness in his right hand and leg. Assuming that it was because he was carrying a heavy bag, he sat on a bench and rested awhile.

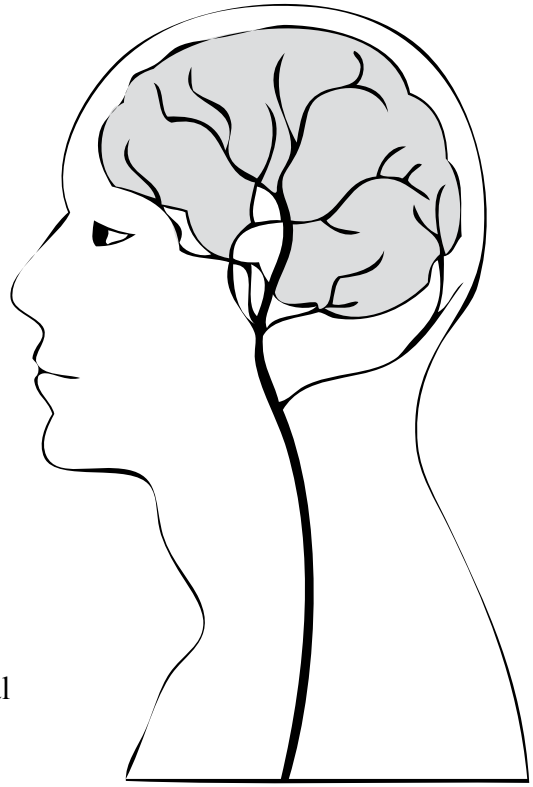
When he was "perfectly alright" again, he continued shopping, carrying the bag with his left hand.

A week later, Nimal had another "feeling" of weakness and ended up in hospital. It was a stroke, for without his knowledge, he was having high blood pressure.

What is a stroke?

A stroke is a 'brain attack'. While in a heart attack, the blood supply to the heart gets cut off, when it happens in the brain, it is a stroke.

Stroke is a common but serious disease that can make you disabled for life or bring about death. It is the second leading cause of death in a majority of countries and 1 in 6 people is at risk of developing a stroke. Strokes are not only preventable but also treatable and knowledge equips us to deal with them more effectively.



What happens during a stroke?

The brain, one of the most important organs in the human body, controls the functioning of the body as well as the mental processes including how we think, learn, feel and communicate. It needs to be 'fed' with essential nutrients and oxygen which are carried by blood. Without the blood supply, brain cells are damaged or destroyed and will not be able to carry out their functions, in turn, affecting the functions of the body. If a stroke damages the part of the brain that controls the movement of a limb, such movement could be affected or the limb could get paralyzed. A stroke is sudden and its effects on the body and the mental processes are immediate.

a stroke is a brain injury caused by the sudden interruption of the blood flow to the brain

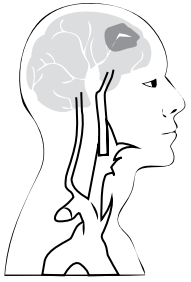
What are the causes of stroke?

The two main causes of stroke are a blockage in the blood pathway/ blood vessel to the brain bringing on an 'ischaemic' stroke or a blood vessel bursting, causing bleeding into the brain bringing on a 'haemorrhagic' stroke.

Ischaemic stroke

In an ischaemic stroke, a clot (thrombus) blocks a blood vessel, cuts off the blood flow to the brain and damages it. This is the most common stroke affecting more than 80% of those who suffer strokes.

The clot may form in different areas:



- The clot could block a main blood vessel to the brain.
- The clot could be formed in the heart or in a bigger blood vessel in the neck and carried in the bloodstream to block a smaller vessel in the brain. Then it is an embolism.
- The clot could block the tiny blood vessels deep within the brain. Then it is known as a lacunar stroke.

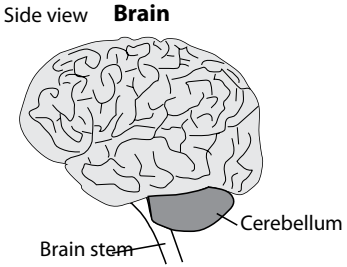
Haemorrhagic stroke

This type of stroke which affects about 15% of those who suffer strokes is caused when high pressure in a blood vessel makes it burst and bleed into the brain. Here the pressure effect of the bleed damages the brain cells.

The blood flow to the brain can be cut off by a blockage (ischaemic STROKE) or a bleed (haemorrhagic stroke)

What are the parts of the brain affected by a stroke?

Any part of the brain may be affected because a stroke can occur anywhere, but the symptoms will depend on the location of the damage. The brain is divided into four main parts: The right hemisphere (right half), the left hemisphere (left half), the cerebellum (hind brain) and the brain stem. A majority of strokes occur in the hemispheres.



A sudden serious bleed could also occur when a blood vessel on the surface of the brain haemorrhages into the covering of the brain or the subarachnoid space. The causes, symptoms, tests and treatment for subarachnoid haemorrhages are different to those of strokes.

What is mini-stroke (transient ischaemic attack -- TIA)?

A mini-stroke occurs when a blood vessel gets blocked briefly but opens out in a little while, dispelling the symptoms. These symptoms which are very similar to those of a stroke may last a few minutes or hours but disappear within 24 hours.

What is the significance of a mini-stroke?

A mini-stroke is a warning of a more severe stroke. About 10% of those who have a mini-stroke develop a bigger stroke over the next three months. However, if treatment is sought after a mini-stroke, the risk of a major, disabling or fatal stroke can be minimized.

2. SYMPTOMS

When should a stroke be suspected?

The symptoms of stroke occur suddenly but have an immediate impact on both the body and mind.

Common symptoms include the sudden onset of……

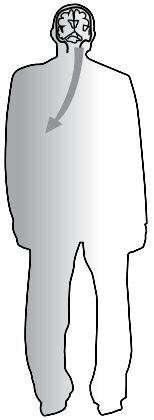
Numbness or weakness of the face, arm or leg, especially on one side of the body.

Confusion and trouble in speaking or understanding.

Loss of vision in one or both eyes. Often, a stroke patient sees only half of an object he is looking at. There can also be double vision.

Trouble walking, dizziness, loss of balance or coordination.

Why does a stroke sufferer have problems in half of his body?



The right half of the brain controls the left half of the body, while the left half of the brain controls the right half of the body. Different areas of the brain control different functions of the body and also the mind processes.
The brain controls everything we do that are taken for granted such as our ability to move, keep our balance, feel, speak, hear, see, think, understand and remember.
Therefore, if the left side of the brain gets damaged there will be weakness in the right side of the body and vice versa.

How can some stroke patients talk while others can't?

In most, the left half of the brain is responsible for language including talking, understanding, reading and writing. The right half is responsible for perceptual skills such as making sense of what is seen, heard and touched and spatial skills like judging size, speed, distance or position in space.
Therefore, if the area in the left brain that is important for talking is damaged, a patient may not be able to talk. He, however, may be able to understand speech if the area responsible for that is not affected.

What are the symptoms when the stroke is in the right half of the brain?

A weakness or numbness on the left side of the body, with difficulty in swallowing and lack of control in passing urine and faeces. There can also be problems in vision, with the patient not noticing his spouse if she comes from the left side of the bed. It is advisable not to ignore such weakness or deny the symptoms, as it may lead to the patient becoming unconscious over the next 24 hours.

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What are the symptoms when the stroke is in the left half of the brain?

This is the important hemisphere, as most of us are right-handed. A weakness or numbness will develop suddenly on the right side of the body, along with difficulty in swallowing and lack of control in passing urine and faeces. Speech and language problems will also arise either in the form of speaking or in understanding the speech of others. There can be difficulty in reading and writing as well. Vision problems can occur with the person not noticing the doctor approaching the bed from the right side. These stroke sufferers are likely to be more severely disabled than those with a stroke in the right side of the brain.

What are the symptoms of a stroke in the hind brain?

As the hind brain controls balance and coordination, a stroke will

cause a sudden, severe headache, vomiting, vertigo (a feeling that the surroundings are spinning), dizziness, difficulty in speech in the form of poor articulation and difficulty in walking due to loss of balance.

What is a brain-stem stroke?

The brain stem controls all the functions that people do not think about but happen automatically such as breathing, swallowing, eye movements, hearing, speech and even the beating of the heart. So a stroke in the brain stem is very harmful.

Since impulses must travel through the brain stem to reach the arms and legs, a stroke in this area may also cause paralysis or leave a person unable to move or feel on one or both sides of the body.

What are the other common symptoms of stroke patients?

A stroke often causes problems with mental processes such as thinking, learning, concentrating, remembering, making decisions, reasoning and planning. A patient may have difficulty in recognizing familiar objects or how to use them. He may also have problems with skills such as reading the time if the brain cannot interpret what the eyes see, following the stroke.

"Why can I remember my wedding cake, but can't remember what I ate in the morning?"

A patient may lose hisshort-term memory and find it difficult to pay attention and concentrate but remember long-term events.

How does a stroke affect vision?

When a person looks straight, he automatically sees things on either side of his visual field. It is the left half of the brain that is important for the right visual field and if the stroke occurs there, he may not see the right half of what he are looking at.

When a stroke occurs in the brain stem, the patient may develop double vision. Occasionally, loss of vision in one eye can also be a symptom of a stroke.

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Knowing the warning signs, symptoms and risk factors of a stroke can save your life or the life of a loved one.

After a stroke -- what?

Thirty percent of stroke patients are likely to make a complete recovery within one to three months and another 30%, with a minor disability, will be able to function independently in the community.

Unfortunately, not everyone recovers fully. If the stroke is very severe, the affected area of the brain is permanently damaged within minutes of its onset. This can result in long-term disability.

In about 10%, if parts of the brain which control vital functions like breathing shut down, a stroke can be fatal.

Why should a stroke-sufferer be rushed to hospital?

An immediate assessment at a hospital is vital for all strokes. Tests are needed to ensure that the right emergency treatment is given to a stroke victim.

"FAST" way to diagnose stroke for fast action

F -- Facial weakness. Can he smile? Has the angle of the mouth gone to a side?

A -- Arm weakness. Can he raise his arms? Can he raise his legs? Has he got weakness of limbs on one side of the body?

S -- Speech problems. Can he speak clearly? Does he understand when I talk to him?

T -- Test all three functions. If he has difficulty with any of them, rush him to hospital.

A stroke is a serious medical emergency that needs urgent treatment. go to hospital immediately -- the sooner it is diagnosed and treated, the better the outcome.

Meanwhile, the symptoms of a second stroke can be as varied as the first –another part of the brain and not the same part may be affected by the second stroke

3. PREVENTION

Can we prevent stroke?

Stroke is not inevitable and about 80% of strokes may be prevented. Some of the risk factors such as ageing, being a man and having a family history of stroke or heart attacks cannot be changed. Lifestyle changes, however, reduce the risk of stroke significantly. Controlling the risk factors and certain medical conditions can further improve the chances of preventing a stroke.

If these risk factors are controlled, the total risk of having a stroke can also be brought down significantly.

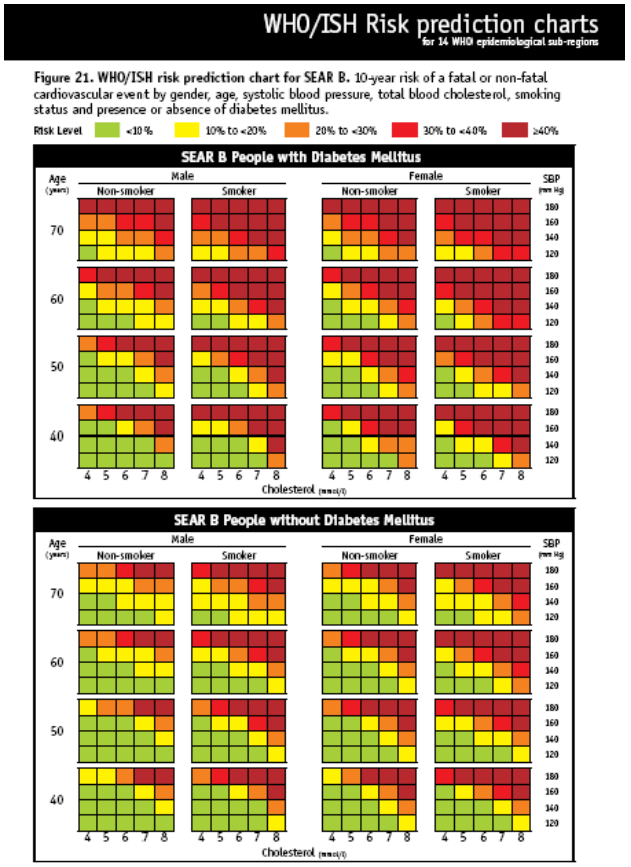
NEARLY 80% of STROKES CAN BE PREVENTED

The risk factors for stroke are:

- High blood pressure
- Diabetes
- Smoking
- High cholesterol
- Being overweight
- An unhealthy diet
- Heart diseases
- Contraceptive pills
- Lack of exercise
- Alcohol
- Stress

What is the "total risk" of developing a stroke?

There are ways of assessing the risk of a person suffering a stroke or heart attack over the next 10 years. Higher the number of risk factors, higher the risk. If a person knows his systolic blood pressure, whether he is a diabetic and his total cholesterol levels, the World Health Organization's 'Risk prediction chart' (given below) will indicate his vulnerability over the next 10 years.



It is best to bring down the risks to less than 10%.

How can the stroke-risk be reduced?

- Know whether you have high blood pressure, diabetes or high cholesterol and control them
- Do not smoke
- Limit the intake of alcohol
- Exercise regularly
- Eat a healthy diet with more fruits and vegetables and low salt, fat and oil and maintain a healthy weight
- Learn the symptoms of a stroke and seek immediate medical attention.

Young or old – who is more vulnerable?

It is a myth that stroke occurs only in older people. Even though it is the 2nd leading cause of death among people above 60 years of age, it is also the 5th leading cause of death among those between 15–59 years.

Stroke risk, however, does increase with age, doubling every 10 years after the age of 55. Two-thirds of all strokes occur in people over 65.

"I survived a heart attack, what are the chances of having a stroke?"

As a heart attack or stroke is caused when blood vessels get blocked, both have similar risk factors. A person who suffers a heart attack carries a higher risk not only of getting a second heart attack but also a stroke. Vice versa, a first stroke increases the risk of a second as well as a heart attack.

Do strokes run in families?

Strokes and heart attacks seem to run in some families. The risk of stroke doubles if someone in the immediate family (mother, father, brother or sister) has had a stroke or heart attack, especially at a young age, below 55 years for males and 65 years for females.

It is not unusual for more than one person in the same family to have a stroke or a mini-stroke. Some families have greater vulnerability to stroke because they have inherited a genetic predisposition to have high cholesterol and high blood pressure. It can also be due to common

but adverse behaviour such as smoking and eating food with too much fat and oil.

Are some risk factors confined to women?

Hormonal changes linked to pregnancy, childbirth and menopause are known to increase the risk of stroke. Birth control pills and post-menopausal hormone treatment also increase this risk.

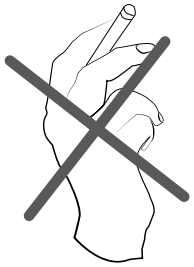
ANYONE CAN SUFFER A STROKE BUT SOME ARE MORE AT RISK

Is it necessary to check the blood pressure regularly?

Often high blood pressure has no symptoms until a heart attack or stroke occurs. Therefore, it is advisable to check the blood pressure at least once a year.

If a person has high blood pressure, the doctor may suggest lifestyle changes and a reduction in the salt intake. The doctor may also consider the total risk of developing a heart attack and a stroke over the next 10 years and may prescribe medicine to bring down the blood pressure.

Does quitting smoking reduce the risk of stroke?



Smoking increases the risk of stroke and heart attacks. The risk of stroke declines considerably within 5 years after quitting smoking. The higher the number of cigarettes and longer the duration of smoking, the higher the risk of a stroke. The answer is to quit smoking. If it is difficult to do so, get help from a doctor.

How to stop smoking?

The person should be determined to stop smoking immediately, not even smoking a single cigarette thereafter. For those who believe that they are unable to stop on their own, here are some useful steps:

1. Set a date to quit. The best time is right now. If not it should be within a week of deciding to stop smoking.
2. Patient should Inform family and friends that you will stop smoking and seek their help.
3. Throw away all cigarettes in your office, car and home.
4. Put away the ash- trays.
5. Clean up your home to make it free of the smell of cigarettes.
6. Avoid places which have the smell of tobacco and change the routine to avoid places where people congregate for smoking.
7. Decide what action such as chewing gum you will take before hand when you get the desire to smoke.
8. Drink plenty of water.
9. Increase physical exercise.
10. Ignore temporary weight gain that follows smoking cessation.
11. Don't give in to the desire to smoke "only one cigarette".
12. Try again if you failed to quit smoking.

"Will my family get affected because my husband is a heavy smoker?"

Yes, your family members will be affected as they become "passive" smokers. The exhaled air of the smoker contains nicotine which is the toxic substance. Even a non-smoker who inhales this smoke is affected by it.

IF A FEW PASSENGERS ON A LONG-DISTANCE BUS SMOKE, IT WILL HAVE AN ADERVSE IMPACT ON THE NON-SMOKERS.

Does diabetes raise the risk of having a stroke?

People with diabetes have high blood glucose (often called blood sugar). If a person's eight-hour fasting blood sugar is more than 7mmol/l (126mg/dl) or random blood sugar more than 11.1mmol/l (200mg/dl), he is a diabetic. If the fasting blood sugar is between 110-126mg/dl () he is a prediabetic.

As people with high blood sugar often have no symptoms, it is important to have the blood sugar checked at least once a year, as having diabetes raises the chances of getting a stroke or heart attack. If a person has diabetes, the doctor will prescribe medication which may either be tablets taken orally or insulin in the form of injections. The diet should also be watched while engaging in regular exercise.

Why should cholesterol be checked?

Cholesterol is a waxy substance found in all parts of the human body. When there is too much cholesterol in our blood, it can get deposited on the walls of the blood vessels. This can block the blood vessels, affecting the blood supply to certain areas of the brain which results in a stroke.

People with high blood cholesterol often have no symptoms, so blood cholesterol levels need to be checked regularly, at least once every 2–5 years. If the cholesterol levels are high, the person will be advised by his doctor to change his eating habits and exercise more. Medication may also be prescribed to help lower the cholesterol. If prescribed, the medication needs to be taken regularly.

Do cholesterol-lowering tablets affect the liver?

The benefits of cholesterol-lowering tablets reducing the chance of a heart attack or stroke are much higher than the risk of the liver getting affected. These tablets may affect the liver very mildly in an occasional patient. If a person is on these drugs, the doctor will request a liver-function test on and off to check the effects on the liver.

How can healthy weight be maintained?

Being overweight raises the risk of a stroke. Weight is the best indicator of the balance between food intake and exercise. Make healthy food choices and get plenty of exercise. Start by adding more fruits, vegetables and whole grain to the diet. Take a brisk walk of 30 minutes every day during leisure time or on the way to office. Take the stairs

instead of the elevator and walk short distances instead of taking a three-wheeler.

Should drinking alcohol be stopped?

Too much alcohol is harmful as it affects most systems in the body. It increases calorie intake and induces high blood pressure. If a person wishes to drink, the alcohol quantity should be limited to no more than three units (one unit is ½ pint of beer, 100ml of wine or 25ml of hard liquor) a day.

How can stress be reduced?

Stress levels by talking to your children, spouse, friends or a member of the clergy. Exercising, listening to music or meditating also help.

For severe stress, counsellors are available at Divisional Secretariats, while counselling is also provided on the phone (0770108307 - 399) by the Ministry of Social Services and some non-governmental organizations.

Does taking birth control pills increase stroke-risk?

Contraceptive pills are hormones. Hormones can make the blood thicker and more likely to clot, and they may increase the risk of high blood pressure. There by stroke.

Hormone treatments for women include Combined contraceptive pill (containing both oestrogen and progesterone) and hormone replacement therapy (HRT).

Birth control pills are generally safe for young, healthy women. But they can raise the risk of stroke for some women, especially those over 35 and those with high blood pressure, diabetes or high cholesterol. If you have already had a stroke, birth control pills may not be safe. Always discuss hormone treatments with your doctor and make a decision that is right for you.

THE STROKE RISK IS MUCH HIGHER FOR PEOPLE WHO HAVE HAD A STROKE OR MINI-STROKE (TIA). ABOUT 10% OF THOSE WHO HAVE HAD A MINI STROKE WILL HAVE ANOTHER WITHIN A YEAR.

How can we help ourselves?

We should take a healthy diet with low fat and salt and high fibre. A diet with high fatty food causes cholesterol to build up on the walls of the blood vessels and the arteries to narrow. Too much salt can lead to high blood pressure. We should also increase fresh fruits and vegetables in our food. Regular exercise is essential as well because being overweight (obese) puts extra strain on the heart.

How can I prevent a second stroke?

Don't suffer a stroke again!

The risk of a stroke increases in people who have already had a stroke or a mini-stroke. To reduce the risk, take your doctor's advice on lifestyle changes such as modifying the diet, reducing the weight, stopping smoking, regular exercises and limiting alcohol. Make sure you continue the medication including blood-thinning drugs prescribed to control blood sugar, blood pressure and high cholesterol and drugs.

SOME TIPS TO REDUCE THE RISK OF STROKE

Check your blood pressure, blood sugar and cholesterol. if high, control Them
Don't smoke
Limit alcohol
Do regular exercise
Have a healthy diet with more fruits and vegetables and low salt, fat and oil and maintain a healthy weight
Be aware of the symptoms of stroke and see your doctor immediately if you
Develop any of them

REGULAR PHYSICAL EXERCISE HALVES YOUR RISK OF STROKE

"Just because the patients improved completely, does not mean that he can stop the medication. Majority need to continue drugs to reduce blood pressure and blood cholesterol and blood thinning drugs for life long. The decision to reduce the medication has to be taken by the doctor after evaluating the condition."

Untreated high blood pressure(hypertention) is the biggest single risk factor for stroke. lifestyle measures and right medication can help reduce high blood pressure.

What could I do with my medicines?

Your doctor may prescribe medication to help keep these medical conditions under control. Take the drugs regularly and make sure the medical conditions are controlled.

How could I cope up with overwork?

Many things in life, like overwork, redundancy, family problems and bereavement can lead to stress and depression. These take a physical toll on the body, and if they are not treated they can contribute to long-term health problems.
It's important that you get any help you need from your doctor or another health professional.

"Sri Lanka along with countries such as India, Indonesia and Myanmar has been identified as having to look into the crucial matter of a high number of aged people in the future, In Sri Lanka, this is not due to the country having a big population but because the health services are such that life expectancy is high."

DIAGNOSIS

How is a stroke diagnosed?

The diagnosis will begin with the doctor asking the patient what happened and when the symptoms began. Then he will also ask some questions to check whether the patient is thinking clearly. He will confirm whether the patient has weakness of limbs, the speech (understanding and ability to talk) is alright, he can see and swallow and he has control of passing urine. The sudden onset of symptoms would be the basis on which the doctor will diagnose a stroke.
Once the doctor ascertains that the patient has suffered a stroke, the most important test that would follow is CT (computerized tomography) scanning of the brain.

Blood tests including a full blood count with picture, blood sugar, cholesterol, creatinine and ESR will also be carried out. This is to find out whether the patient has diabetes and high cholesterol or both as these are risk factors for stroke and kidney function. High blood pressure damages kidneys and a stroke patient may have altered kidney functions. There could also be evidence of other rare blood disorders.

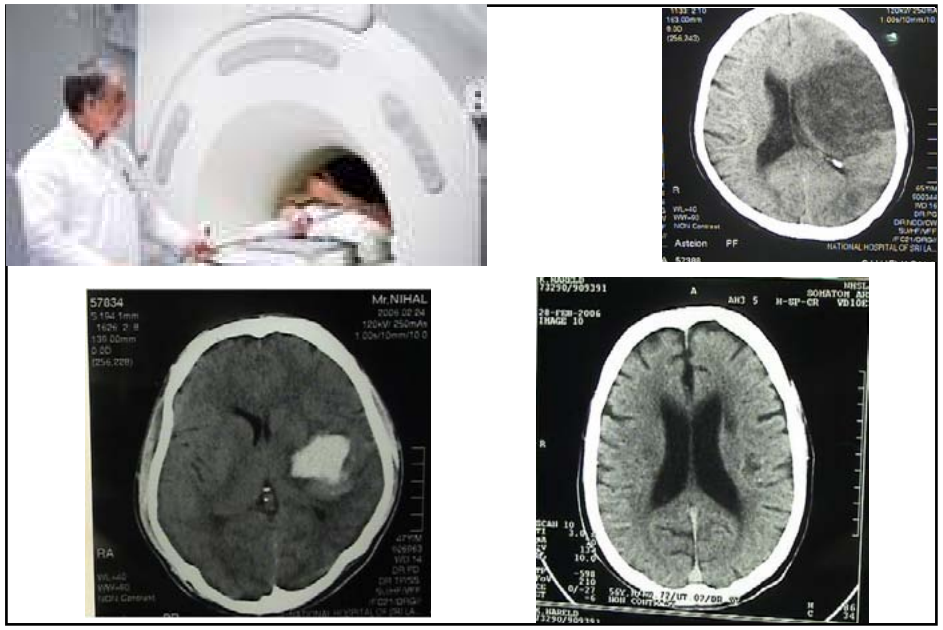
What is a CT (computerized tomography) scan?

While X-rays show only the skull, a CT scan of the brain will give the image of both the skull and the brain. The patient will have to lie in a machine while its inner part rotates around his head taking X-rays from different angles.

Why are CT scans of the brain necessary?

CT scans are useful in identifying a stroke, brain tumours, brain abscesses and other rare blood vessel defects of the brain. Very early CT scanning will indicate whether a stroke has been caused by or a blood vessel bursting and bleeding into the brain. Injury caused by a blockage of a blood vessel could be shown only on a delayed CT done about 24hours after the onset of symptoms.
A CT scan of the brain, equivalent to an ECG (electrocardiogram) of

the heart, needs to be done as soon as possible to decide on emergency treatment options.



Why do doctors assess heart functions of stroke patients?

Both heart attacks and stroke are caused by the blockage of blood vessels. Once a person has had a stroke, there is a higher tendency for the same person of having a blocked heart blood vessels (coronary artery). In some, a weak heart sends blood clots to the brain leading to a stroke. Therefore, it is essential to check the heart of a stroke patient through an ECG and an echocardiogram.

What is an ECG (electrocardiogram)?

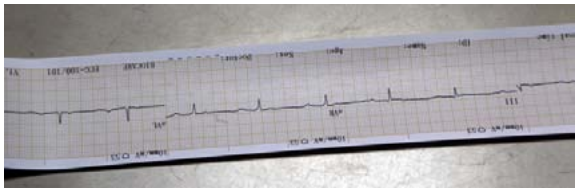
An ECG is a painless test to get information about the electrical activity of the heart, such as the rate and regularity of the heart beat. It is sometimes the only method of detecting irregularities in the heart rhythm in atrial fibrillation. When the heart does not beat regularly, blood in the heart could form clots which could float into the blood vessels and block the vessels to the brain causing a stroke.
If a patient has had a heart attack in the past, an ECG may show features

of that as well. If the patient has an implanted device like a pacemaker to assist the heart beat, its effect on the heart can also be studied through this test.
An ECG is performed on every stroke patient as part of the routine evaluation.

How is an ECG done?

Asked to lie down, be still and hold the breath for a short period, an ECG technician will apply sticky electrodes on the chest to record the heart beat on a paper. There are no risks involved in this 10-15 minute test.

A CT SCAN OF THE BRAIN IS THE ONLY TEST TO LOCATE A STROKE, WHAT CAUSED IT (A BLEED INTO THE BRAIN OR A BLOOD CLOT) AND HOW SERIOUS IT IS.



What is the need for an echocardiogram in a stroke?

An echocardiogram is also a painless test carried out with a gel-applied probe on the chest wall to determine the size of the heart's chambers and the quality of the valves. If the heart is not contracting properly and the valves are diseased, blood clots may form in the heart and block the major blood vessel to the brain causing a stroke.
If a blood clot is found in the heart, a blood-thinner such as Warfarin may be prescribed.
In some stroke patients where more details of their hearts are required,

another special test, the Trans-oesophageal echocardiogram (TOE) may also be performed. During this procedure, the patient is required to swallow the probe.

What are the concerns about taking Warfarin for heart problems?

Warfarin is a blood-thinning medication which prevents blood clotting in the heart. If the dose of Warfarin is too low, there is no advantage because clots could still form in the heart, while if the dose is too high, too much thinned blood could start bleeding from various places in the body.

Therefore, if the patient is put on Warfarin, the doctor should monitor him through the blood test, International Normalized Ratio (INR), to make sure that the dosage is right. The target INR is dependent on the underlying heart condition and in a majority it is 2–3 and the dose of Warfarin is adjusted accordingly.

What is a carotid ultrasound?

This is an ultrasound scan also called carotid doppler or carotid duplex to view the major neck vessels that carry blood to the brain. It is painless and performed by rubbing a gel-applied probe on the neck.

What is the purpose of a carotid ultrasound? This test is performed on patients who have had mini-strokes thought to have been caused by clots (cholesterol deposits) from the major blood vessels in the neck.

These two major blood vessels are carotid arteries and cholesterol deposits could cause them to narrow. If this ultrasound shows severe narrowing (70%–99%) of the carotid vessels, the removal of these cholesterol deposits through surgery will reduce the recurrence of a stroke.

CARE

What should you do if a loved one develops a stroke?

Stroke is an emergency and anyone suspected to have had a stroke should be admitted to a hospital with the best facilities in the area immediately. If the person is drowsy or unconscious, do not give him/her anything to drink.

What is the best treatment for stroke?

Stroke patients should ideally be managed in wards meant exclusively for them. Depending on the facilities available at the hospital, the patient will be admitted either to the stroke ward (stroke unit) or to the general medical ward. The best management for such a patient would be by the team in a stroke unit because he/she would have special needs in feeding, bladder and bowel functions, physiotherapy and also occupational and speech therapy.

The stroke team will include a doctor, nurse, physiotherapist, occupational therapist, speech therapist, counselor and social service officer. While the counselor will discuss and console the patient and family members, the social service officer will coordinate arrangements for them to access the assistance available from the Ministry of Social Services, if the patient is left disabled.

Stroke unit care is the most beneficial treatment for stroke victims, medical science has proven. It is mandatory to have a stroke unit in every provincial and teaching hospital in the country. If a stroke unit is not available in other hospitals, available resources should be re-organized to allocate an area for stroke patients. This would facilitate the stroke team, working together, to help in the recovery of stroke patients.

Is there medication to cure stroke?

A stroke caused by a blockage of blood vessels can be treated with clot-busting drugs such as rtPA (recombinant tissue Plasminogen Activator). rtPA should be given in injection form soon after such a stroke and not later than four and half hours, to get the best results. Tests, such as CT scanning of the brain, blood sugar, INR and platelet count, need to be done before treatment with rtPA. As this treatment needs urgent coordination between several sections of the hospital, it is practised in very few hospitals in Sri Lanka. Therefore, it is important to bring the patient to a hospital with the best facilities, as early as possible.

What is rtPA?

rtPA, in the group of drugs called thrombolytics, dissolves the clot that is causing the disruption in the blood flow to the brain. The clot should be dissolved before the brain is damaged permanently to minimize injury to the brain and subsequent disability. Therefore, it is crucial for the patient to be taken to hospital as soon as the first symptom is noted. The time between the first warning sign and admission to hospital may determine whether the outcome would be good or poor.

Will all stroke patients receive rtPA soon after admission to hospital?

As there are many factors that determine whether or not a patient is able to receive rtPA, all patients will not be administered this drug. If the patient is brought to the hospital within the 4.5-hour time-frame and after seeing the patient and CT scan, if the doctor determines that he/she is able to receive this clot-buster, there may be better recovery.

A 'CLOT-BUSTER' CAN REDUCE THE EXTENT OF BRAIN DAMAGE IF GIVEN WITHIN FOUR AND HALF HOURS OF A STROKE.

What are the other medicines given to stroke patients?

Many other drugs are given to stroke patients to prevent a recurrence of stroke.

A low dose of aspirin, a blood-thinning drug, reduces the risk of a recurrence of stroke, especially in patients with thickened blood vessels caused by smoking, high blood pressure, diabetes and high cholesterol levels.

Wafarin, a stronger blood-thinning drug, prevents stroke in patients with heart disease, particularly with an irregularly beating heart or diseased heart valves.

Selvakumar, 49, a non-smoker who was physically fit and active saw no reason to consult a doctor for more than 15 years.
But, suddenly he felt he was fainting, he recalls. "It was terrible. I had a sense of total confusion."
Realizing he could not move his right side, Selvakumar who was driving home from work, pulled his car to the side of the road, where he was recognized by some people who took him to hospital. He had suffered a stroke.
What he had not known was that he did have a serious health problem – high cholesterol that stemmed from a hereditary factor.

Surgery is rarely used to treat or prevent a stroke.

If the stroke has been caused by a large bleed in the brain, a Neuro-surgeon may aspirate the blood clot. In occasional patients who are born with unusual blood vessels, surgery may be useful in preventing another bleed.

Meanwhile, carotid endarterectomy to clear a blockage in the carotid artery, the main blood vessel carrying blood from the heart to the brain, is performed by Vascular Surgeons to prevent a recurrence of stroke.

What is the role of the nurses?

Nurses, in addition to dispensing medicine to stroke patients, also take care of their general health, nutrition and bladder and bowel functions. They are important when a patient is unconscious or severely

disabled, with difficulty in swallowing, speaking and in poor control of the bladder and bowel. Nursing stroke patients becomes complex when they have difficulty in expressing themselves or understanding what they are told.

When an unconscious patient is kept in face up position, the tongue goes back into the throat and obstructs breathing. The nurse will keep the patient turned on his/her side to allow the phlegm to drain from the mouth. The secretions collected in the mouth are removed to prevent them getting into the lungs. If the pateint is with breathing difficulty, he/she will be given oxygen via a face-mask.

Mouth care three times a day is another important duty that nurses perfom for a stroke patient. A gauze-covered tooth brush or forceps and mouth wash solution or lime and salt mixure diluted in a small amount of water are used to clean the mouth. The application of glycerine inside the mouth and on the lips prevents encrustation and drying.

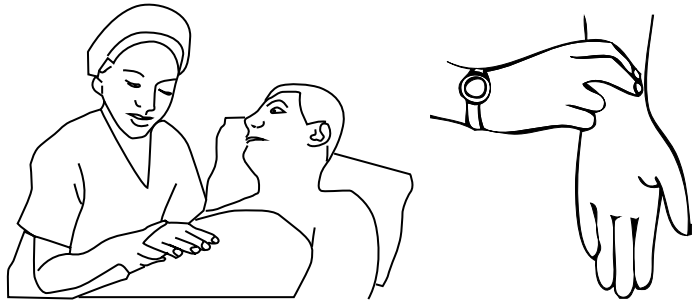
More than one-third of people who have suffered a stroke have problems in swallowing. A stroke patient should not be given food or drink until a nurse or speech and language therapist has checked whether he/she can swallow. If the patient is unconscious, nurses insert a narrow feeding tube through the nostril into the stomach for nasogastric (NG) or tube feeding. This life-saving procedure to maintain nutrition is painless.

TIPS FOR SAFE SWALLOWING

- Make meal time quiet and relaxed. don't rush the patient.
- Let the patient have small, frequent meals.
- Give the patient only a teaspoonful at a time & make
- sure it has been swallowed before giving more.
- Don't mix food and drink in the same mouthful
- Don't let the patient talk when eating.
- Make the patient sit upright for half an hour after each meal

If a conscious patient gets a cough when eating, that indicates that he/she cannot swallow properly and there is a risk of food and drink getting into the passage through which he breathes and then the lungs (aspiration). This will lead to chest infections and pneumonia. Therefore, the patient may need tube feeds until he is comfortable with swallowing.

What are the other duties rendered by nurses?



Nurses position the paralysed arm or leg of the patient correctly to stop further damage or pain. They also record the pulse rate and temperature regularly for early identification of an infection. If the patient is bed-bound, the nurse will turn him/her from side to side regularly, to prevent pressure sores and blood clotting in vessels in the calf. Compression stockings and special mattresses such as air or water mattresses can also be used for this purpose.

Some patients lose control in passing urine and motions following a stroke. A catheter will then be inserted by the nurse to help drain the urine from the bladder. The nurse will also clean up the patient and keep him/her dry all the time.

Some other patients may also be unable to attend to their daily activities such as eating due to their weak limbs and here too nurses will assist them.

A WATER-SWALLOW TEST IS ESSENTIAL FOR A STROKE PATIENT.

THOUGHTS OF A PATIENT

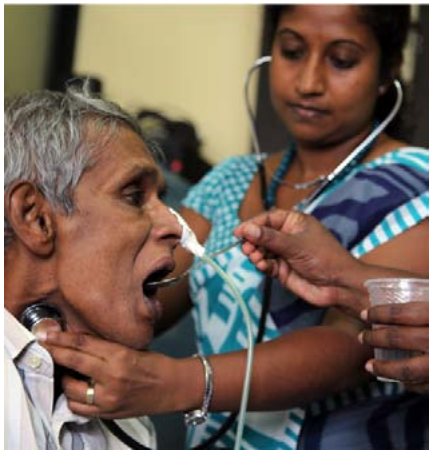
When I came to hospital, I wasn't allowed to eat or drink, but when the food was served I could smell it and felt hungry.
Now I can swallow, but eating is difficult with only one hand. I miss my left hand. When I want to peel a banana, I have to wait for assistance. I wish I could do it myself.

What is the water-swallow test?

The patient will be given a few teaspoons of clean water to drink and if he/she can swallow it without choking and coughing, he/she will be asked to swallow half a glass of water. If the patient can do so, he/she will be allowed to take food orally.

If the patient has difficulty in swallowing the water, he/she may need tube feeding and be referred to a speech and language therapist for better assessment.

Why are liquids harder to swallow for the patient with difficulty in swallowing?



As liquids move faster in the mouth, the throat muscle will not have time to coordinate the contractions needed for swallowing and the epiglottis will not move to close the breathing tube immediately due to the weakness. However, for thicker feeds that move slowly, there will be adequate time for coordination and the patient will be able to swallow. That is why some patients may need fluid thickeners and help with eating for a while. Semi-solids like jelly, smashed papaw and thick soup will be easier for them to take.

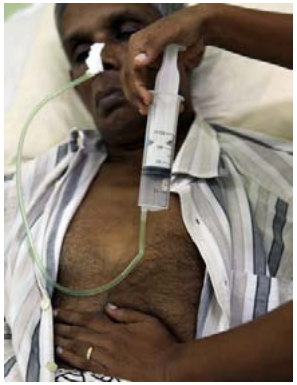
If the patient develops any of the following, he will be at a higher risk for aspiration (getting food into the lungs) and should not be allowed to continue eating.

- Coughing during drinking
- Clearing the throat after swallowing
- A change in voice quality after swallowing
- When swallowing takes a longer time
- Drooling water or food from the mouth
- Moving the position of the neck when swallowing
- Complaining of a pain or obstruction when eating
- A change in the breathing pattern immediately after swallowing

How to tube feed a patient?

With a 20ml or 50ml syringe, towel, blenderized or liquid feed, glass of boiled and cooled water and bowl of water at hand, the patient should be told that he is to be fed. If the patient is alert and can keep his balance while sitting, he should be kept in that position (90o) with the back supported firmly. If the sitting balance is poor, the patient's head should be elevated using pillows or the back-rest of the bed. The arms should rest on side pillows while the legs are extended straight. The chest and shoulders should be covered with the towel. Do not allow the patient to talk while eating. Therapist should sit at the same height with the patient for feeding.

The nurse should wash her hands prior to feeding the patient, after



which the outer end of the feeding tube should be put into the bowl of water. If air bubbles arise, it is an indication that the inner end of the tube is in the breathing pathway and no feed should be given through the tube.

Next, the syringe should be attached to the outer end of feeding tube, gently aspirated back to obtain the residual stomach contents and the contents returned to the stomach.

Air should be drawn into the syringe and 20-30ml injected to the stomach, while keeping a hand over the left upper part of the tummy. When air gets into the stomach through the tube, a whooshing will be felt, at which time the proximal end of the feeding tube should be pinched or clamped, for the patient is ready for feeding.

The nurse should sit at the same height that the patient is at. Through the tube will be given the liquefied diet prepared to suit the patient's associated conditions such as over/underweight, diabetes mellitus and high cholesterol. The recommended feed should either be put into the blender or come in the form of a liquid, according to the feeding schedule. Depending on the dietary requirement, any food that can be made to run through the tube my be given. It could be a kanjee or soup with all nutrients such as rice, dhal, vegetables, fish or chicken; half-boiled or raw eggs; a milk drink with milk powder and a high protein supplement; yoghurt; a fruit juice such as lime or papaya; king coconut; beverages, blended food in water; or food supplements. The optimal thickness of the feed is important for it

to flow through the tube and to give the adequate calorie requirement.

ANY FOOD, ONCE LIQUEFIED, CAN BE GIVEN THROUGH THE TUBE. THEREFORE, DO NOT CONFINE FEEDS TO 'KOLA KENDA' OR KANJEE MADE OF GREEN LEAVES AND HERBS

The syringe without the piston should be attached to the outer end of the feeding tube and held vertically as shown in the picture above. Initially, fill the syringe with 20-30 ml of boiled, cooled water and drain.Then fill the syringe with the prepared feed and refill until the necessary amount is given to the patient. While feeding, elevate the tube 1½ feet above the patient's head for better drainage. Once the feeding is over, fill the syringe with 50ml of water to ascertain tube patency.This will reduce infections, tube crusting and occlusion. Finally, clamp the tube end and secure with tape and avoid pressure on the skin of the nose.

Important do's and don'ts during tube feeding

It is important to keep a gap of at least 3-4 hours in between feeds and not give more than 2.5-3 litres per day (24 hours). The feed which should be 300-350ml at a time should not be released to the stomach rapidly. Do not allow air to enter the tube while feeding. Keep a record sheet with date, time and type and amount of food given for easy reference.

How to determine the success of tube feeding?

If the patient is comfortable, relaxed and tolerating the food, it is a success.

The presence of nausea, vomiting, diarrhoea, constipation and urticaria will suggest intolerance.

When the patient can swallow better, determined by an experienced nurse or speech and language therapist, semi-solid food such as jelly

and yoghurt may be introduced orally while the tube is still in place. Gradually, solid food can be given, followed by liquids. It is vital to remember that liquids are the most difficult to swallow and should be introduced last.

When should the tube be removed?

While naso-gastric tube is in place, the patient's ability to swallow can be checked by giving him a teaspoonful of clean water to drink. When the patient can swallow the water comfortably, he can be given semi-solid food such as jelly or yoghurt with the correct consistency orally.

Gradually, the patient can be fed solid food orally followed by liquids. Please note that liquids are the most difficult to swallow and as such introduced last. When the care-giver is confident that the patient is very comfortable in swallowing, the tube can be removed.

If the patient continues to have difficulty in swallowing, he will have to depend long term on tube feeds either nasally or directly to the stomach through the skin of the upper tummy (percutaneous gastrostomy tube).

How are urinary problems managed?

Some stroke patients pass urine without knowing, while others have a desire to pass urine but cannot do so. For unconscious patients and those who wet their clothes without knowing, a catheter should be inserted to drain the urine from the bladder.

Patients who have suffered a mild stroke or those who are unable to pass urine despite having a full bladder, should be provided privacy and a natural setting to pass urine. Male patients could be asked to stand at the bedside when using the urinals. If the patient can walk, he/she can be taken to the toilet or let use a bedside commode.

To facilitate the passing of urine, the lower tummy area can be warmed or the patient given a cup of tea. If the patient is still unable to pass urine, a catheter is unavoidable.

How to manage a urinary catheter?

The rubber catheter is connected to a urinary bag that has a valve at the lower margin. It is important for a patient with a catheter to drink fluids

to pass an adequate volume of urine. The bag should be emptied at least twice everyday and the catheter changed once in 2-3 weeks. However, silicon catheters can be kept for 3 months.

The patient's bladder control should be checked before re-inserting the new catheter.

Catheter drainage is required until bladder control is regained and in a majority, it can be removed within a few weeks or months. For some patients, though, a catheter is required for a longer period.

How can a patient get the catheter changed?

Catheters should be changed under sterile conditions by a doctor or an experienced nurse. Otherwise, germs can get into the bladder and cause urinary tract infections.

As a patient on a catheter has a higher risk of developing these infections, if he/she gets high fever with shivering, vomiting and lower tummy pain which are the common symptoms of UTI, doctors will begin treatment with antibiotics after sending a sample of urine for bacterial culture.

How should bowel problems be managed?

Bowel training helps to develop regular bowel habits and prevents the involuntary opening of the bowel. This is because some stroke patients pass faeces without their knowledge, soiling themselves and their beds, while others are not able to open their bowels for weeks.

A high-fibre diet with an increased intake of water and physical activity will prevent constipation. More fruits and vegetables should be given to eat while about 2-4 litres of water should be drunk per day. Despite dietary modifications, if the patient continues to be constipated, doctors will recommend drugs to soften the stools. Occasionally, the manual removal of faeces may be needed and the best time will be after breakfast or determined by the patient's previous bowel habits.

Thoughts of a patient

I don't feel comfortable with somebody helping me to the toilet. I feel embarrassed. I leave it to the last moment. My main aim…to get fit enough to get to the toilet on my own.

Why do pressure sores/ bed sores develop in stroke patients?

Bed sores form in patients who are bed-bound for long periods as prolonged pressure on the skin over the bony prominences makes the skin soft and fragile and prone to injury. The more vulnerable areas are the back of the head, elbows, knees, heels, ankles and buttocks.

No Pic

Can bed sores be prevented?

The patient should be moved every 2 hours from side to side and also made to lie on the back according to a schedule. Special air or water mattresses reduce the risk of bed sores by relieving the pressure on the bony prominences.

The patient should never be dragged around. Bed baths should be given and pressure-point areas cleaned and massaged to keep the skin clean and dry.

Look out for any red, dry or broken areas of the skin. Cut the toe and finger nails. Keep the patient in the right body position to prevent contractures, while using dry and clean bed linen without creases.

How to make a stroke patient sleep comfortably?

Avoid a noisy environment and pay attention to bed-time rituals and needs. Switch off unnecessary lights and use a fan in warm weather. While exercise during the day will facilitate sleep, soft music may also help. A majority of stroke patients feel mosquito bites but are unable to move. So use mosquito nets.

How can family support help in recovery?

Family support is essential for a stroke patient who feels despair and depressed due to the unexpected disability he/she is faced with. The re-assurance and motivation by family members and relatives will

make the patient optimistic and encourage better engagement in therapy. Positive thinking is also very important for better recovery.

Family members should understand that the patient needs continuous physical and mental support. When providing patient care, it is best for the care-giver to be on the affected or the paralysed side of the patient. Patience and tolerance are essential as some patients lose their temper easily. Many others may become depressed and unwilling to engage in activities of daily living.

Do not tell the patient of unpleasant problems or give sad news. Commend even small improvements and encourage the patient with simple words such as, “You are better than the previous day”. Do not talk about weaknesses. Close attention and proper care prevent complications related to stroke. Motivation and support are very important for rehabilitation.

How should a stroke patient be assisted to attend to his/ her own care?

Allow the patient to engage in self-care activities as much as possible and encourage him/her. Let him/her take time over whatever needs to be done. The care-giver should watch patiently until it is clear that the patient can perform the intended activity.

Praise the patient about his/her strengths. Give support to perform difficult functions until he/she gains independence. Try to comfort the patient as much as possible.

When can a stroke patient go home from hospital?

On admission to the hospital, a stroke patient may need intensive treatment and 24-hour nursing care. Significant recovery usually comes within the first few weeks, but improvements continue over the years. Rehabilitation is a process that needs to continue even after discharge from hospital. The priority is for the stroke patient to leave hospital as soon as he/she is fit and safe to do so.

What is a discharge plan?

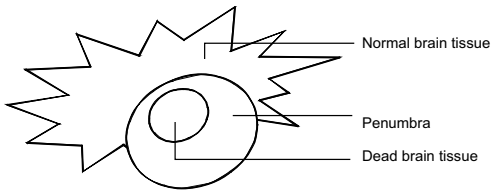
The stroke team assesses the patient’s progress carefully and

decides on a plan for management after discharge. The social service officer's support is mandatory to make some patients independent and link him/her to community resources. In an ideal setting, the occupational therapist will visit the patient's home to make sure that the setting is safe. A physiotherapist will help decide the closest physiotherapy unit available for the patient. Together they will work out a discharge plan, making sure that all the support needed from health and social services is in place before the person leaves hospital. Team members will explain ongoing rehabilitation to family members.

Once discharged, the patient can link up with the relevant divisional secretariat to obtain social support if necessary. The social service officer of the divisional secretariat will visit the patient's home to fulfill his/her needs.

REHABILITATION

What is the basic mechanism of stroke recovery?



Generally, brain cells are unable to survive more than a few minutes without the supply of oxygen. When a blood vessel is blocked, the affected part of the brain is injured within a few minutes, the centre of the injury being the dead cells which do not recover. The penumbra or the part surrounding the injury becomes dysfunctional but consists of cells that are viable if the blood supply is restored. When the blood supply to the penumbra is restored by opening the tiny vessels around the injury, the condition of the patient starts improving.

When a stroke makes part of the brain to lose its functioning, it is also possible that another part takes over some of those functions. Much of the recovery happens in the first few months, but the process can continue for several years after the stroke.

OFTEN LANGUAGE IMPROVES MORE SLOWLY THAN OTHER DIFFICULTIES, BUT CONTINUES TO IMPROVE FOR LONGER. THEREFORE, IT IS IMPORTANT TO STAY POSITIVE AND UNDERGO REGULAR THERAPY.

What are the disabilities after a stroke?

A stroke patient could be troubled by weakness or paralysis, loss of balance, swallowing difficulty, lack of sleep, tiredness, speech and language difficulties, perception and interpreting difficulties, changed mental processes, mood swings, lack of bladder and bowel sensation and loss of eyesight.

Most of these will improve over time as the brain recovers. However, if affected severely, there may be long-term disability.

What is rehabilitation after a stroke?

Rehabilitation is a very important part of recovery for stroke survivors. It is aimed at helping them to regain as much independence as possible, by re-learning the skills they have lost, learning new skills and finding ways to manage permanent disabilities. Stroke rehabilitation is designed to help victims to return to independent living.

The types of services needed are:

- Physical therapy to restore movement, balance and coordination
- Occupational therapy to re-learn basic skills such as bathing and dressing
- Speech therapy to re-learn how to talk
- Counselling services
- Social services

When should rehabilitation commence after a stroke?

Rehabilitation should start in the first few days after a stroke, with good nursing care focusing on assessment and prevention of complications. Once the person is stable, the stroke team works out an individual rehabilitation programme

REHABILITATION IS AN IMPORTANT PART OF STROKE TREATMENT AND SHOULD START AS SOON AS POSSIBLE TO GET THE BEST EFFECT.

PHYSIOTHERAPY

What is the management for weak limbs?

Stroke can cause weakness or paralysis on one side of the body and problems with balance or coordination. Weakness of an arm or leg is often made worse by stiffness of the limb which develops gradually.

Stroke rehabilitation should be done by a multi-professional team. Physiotherapy has to be started immediately or as soon as possible to help the patient regain as much mobility and muscle control as possible. Undue delay may not give good results, while early commencement of physiotherapy will help minimize complications and facilitate early recovery.

The aim of physiotherapy is to improve movement and minimize stiffness and pain caused by the movement of stiff limbs. Stiffness can be prevented to a great extent by physical exercise. Physiotherapy will help the patient to sit up, move around safely and regain balance. The correct position, whether lying, sitting or standing, will be important in rehabilitation.

If the patient cannot move, the physiotherapist will first make sure that the limbs are positioned correctly on the bed and reiterate the value of changing their position regularly to stop stiffness in muscles and joints.

If the patient finds it difficult to stay upright in bed or in a chair, the physiotherapist will work with him to help him regain his balance. When the patient is ready, he will be made to stand with the support of equipment or other people and later to move around safely.

The treatment for weak or paralysed limbs starts with small, guided movements and by practicing simple tasks. As the patient improves and his strength builds up, he will be shown larger movements and more complicated exercises that encourage both sides of the body to work together, to stop over-using the unaffected side.

How will a stroke patient overcome unsteadiness or imbalance when walking?

Unsteadiness (loss of balance) can be caused by damage to the cerebellum or the part of the brain that controls balance. It may also

happen because of muscle weakness. The physiotherapist will train the patient to get back his balance.

How will early physiotherapy help to improve the patient's condition?

During the very early stages, depending on the severity of brain damage, the patient may be unconscious, semi-conscious or irrational. During this stage, it is the duty of the physiotherapist to assist the medical team in preventing and minimizing infections of the respiratory system caused by aspiration. Breathing exercises, postural drainage, effective coughing and removal of secretions prevent or minimize chest complications.

Passive movements of the paralysed limbs will also be carried out to maintain the range of movement to prevent muscle contractures, joint stiffness and deep-vein thrombosis.

Later, assisted movement where the patient does physiotherapy with the help of the normal side will follow, after which there will be active movement without any support.

Are there special exercises to suit the disability of the patient?

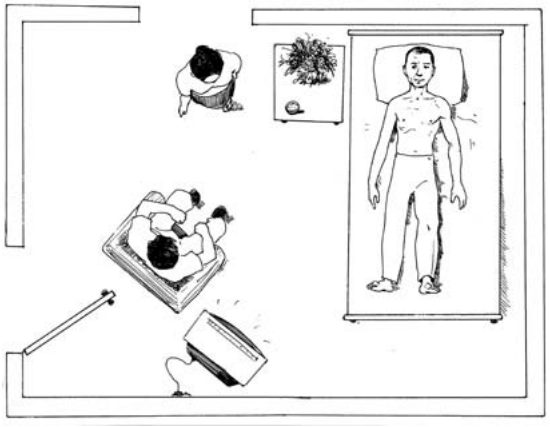
There are special exercises a patient should perform depending on the stage of stroke and disability suffered.
One exercise regime is not suitable for all stroke patients. Therefore, it is important to assess the patient and tailor the exercise regimen to suit him.

Physiotherapy not only improves the physical but also the mental condition, directing the patient towards a healthy life.

How effective is physiotherapy?

Scientific research has clearly demonstrated the benefits of physiotherapy for stroke patients. The outcome of physiotherapy will depend on age, other associated conditions such as difficulty in understanding speech and depression, size and site of damage in the brain, weight and fitness prior to stroke, time of onset of physiotherapy after the stroke and finally the efficiency of the physiotherapist.

How should you arrange the stroke patient's room?



The bed should be placed in such a way that the stroke patient's affected side should be towards the entrance while care-givers should also approach him from that side. The television, radio and flower vases should be placed in the room on his affected side as well and he should be able to see them through that side. This will encourage him to use the paralysed side more. If objects are kept on the normal side of the patient, he might ignore the affected side of his body. The patient should not be isolated. He should also be allowed to watch TV and listen to the radio.

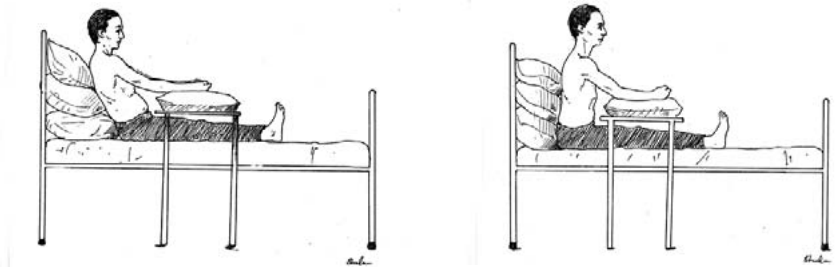
How should you position the patient on the bed?

The positioning of the patient is very important for early recovery and to prevent deformities, contractures and bedsores.

When lying with the face up, the patient should be in the position as shown in the picture, with the arm resting on a pillow.
Early mobilization is the key to recovery and the patient should be allowed to sit in an arm-chair as soon as possible.

How should the patient lie on the affected side?

The patient's body should be positioned straight, the affected shoulder protracted on a pillow with the forearm turned up and the affected leg slightly flexed at the knee. The normal leg should be on a pillow as seen below.



How should the patient sit on the bed?

The patient's body should be upright, with the head and body in line. The hands should be clasped and kept on the bed table and the legs kept straight. The half-lying, propped-up position should be discouraged.

How should the patient sit in a chair?

Once the patient has achieved hip control, he should be helped to gain balance while sitting. The patient may not sit up on his own without assistance. Gradually encourage the patient to sit up from the lying position by placing his legs down from the bed and propping himself up on the affected elbow, giving weight to that elbow.

When the patient has static sitting balance without any movement of the body or arm, functional exercises should be added to achieve dynamic sitting balance. The patient's achievements in doing things on his own should be encouraged. Minimum assistance should be offered in activities of daily living such as eating, drinking or combing the hair that he is capable of.

How should the patient move from the bed to the chair?

The therapist will place his hands under the patient's shoulder while supporting his knees and feet. The patient will be asked to hold the therapist's waist or shoulder as he pulls his body forward and makes him stand. Thereafter, the patient will be pivoted to sit on the chair.

How should the patient get up from the chair?

Usually when standing up, the patient pulls the normal leg backwards which makes it difficult for him to put weight on that leg. The therapist will put his foot gently over the patient's normal foot or keep his foot behind the patient's normal foot to prevent its backward movement. Then the patient will be asked to clasp hands and stretch them out while being encouraged to lean forward. The therapist will put pressure on the patient's knee and ask him to lift his buttocks from the chair, standing up gradually. Sitting once again will take place in reverse order.

After sitting balance is achieved, the patient will be made to stand up. The height of the bed should be adjusted according to the height of the patient, while the physiotherapist will assist him to stand up correctly.



How should the stroke patient begin walking?
The therapist will stand on the patient's affected side and ask him to move his normal leg forward while the weight passes through the affected leg which is supported by the therapist.


Thoughts of a patient
Before I began my physiotherapy, I was mentally down. I'm glad I started physiotherapy, as I feel stronger now. After the first physiotherapy session I realized that I would get back on my feet once again. The physiotherapist encourages me and tells me I'm improving, although sometimes I feel like I'm not getting on alright. There must be some truth in what he says….

How should the patient cope with the physiotherapist?
Positive thinking is very important for stroke recovery. The patient should have self-confidence and attempt to do things by himself.

He should try to improve his relationship with others and continue previous recreational activities. While taking physiotherapy, he should not be hesitant to discuss his other problems with the physiotherapist. An experienced physiotherapist will come up with an unexpected solution to the patient's problem.

PHYSIOTHERAPY USES EXERCISES AND MASSAGE TO KEEP MUSCLES AND JOINTS WORKING PROPERLY.

How can a care-giver help in physiotherapy?
The care-giver should encourage and help the patient to pursue treatment. The patient should be encouraged to do things by himself and helped only if necessary. The care-giver should not give total assistance to the patient out of sympathy.

The care-giver can assist the physiotherapist by arranging the items needed daily in such a way to improve the patient's functional capacity. He should also ensure that the patient carries out the instructions of the physiotherapist.

The Government hospitals with facilities for physiotherapy are the National Hospital of Sri Lanka, All Teaching, General and most of the Base Hospitals and RHEUMATOLOGY AND REHABILITATION HOSPITAL- RAGAMA.

The Patient should make an appointment on the referral letter given by the medical officer at the OPD/Clinic. he should also take all medical records and diagnosis cards along with him when attending physiotherapy sessions.

COMMUNICATION

Why communication is affected in stroke patients?

Communication is a two-way process. When one person talks or expresses himself, the other will hear him and comprehend and understand him. In a majority of people, communication (speech) is linked to an area in the left brain with different sections in that area specializing in expression and comprehension. Communication is affected if these sections are hit by a stroke.

THIS IS HOW WE COMMUNICATE

We think of what we need to say when talking – for example, if we need to say….pen, we select the right word from many others such as Pen and Pencil.

Then we identify the correct sound pattern of that word and articulate it.

When understanding the word, First we hear the sound pattern of the word…….P…e…n and the brain matches the word with the right picture.

When the brain selects the right picture for the word, we know that we have understood the word.

What are the speech problems experienced in a stroke?

If a patient is unable to communicate, it affects his ability to learn. Therein is the outcome of a stroke. When the patient is unable to communicate, he is in distress. Therefore, it is important to pay attention to speech problems.

Speech problems could come in two forms – difficulty in handling language in expressing or understanding (dysphasia) or difficulty in pronouncing words (dysarthria).

What is dysphasia?

"I want to eat a piece of apple but I can't find a way to ask for it?" are some thoughts of a stroke patient with dysphasia. Difficulty in using and understanding the spoken and written language is common after a stroke. A person who has dysphasia may know what he wants to say but cannot find the correct words. It may be hard for him to understand what others are saying, even if his hearing and thought processes are not affected. He may respond well to gestures, but not verbal commands. Speech therapy can help such patients recognize words or find other ways to communicate such as using gestures, word-and-picture charts, symbols or computers.

Will a patient forget everything following a stroke?

No. A stroke patient with a communication disorder may appear to be confused, but usually his memory is intact. He can remember like any adult of his age but talking or engaging in a conversation sensibly will be harder for him. He can understand what is happening around him and his daily routine if he does not have attention dysfunction. He is merely unable to recall the right word.

Why do stroke patients cry and laugh frequently?

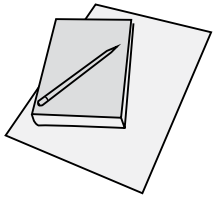
These symptoms are commonly seen in those with dysarthria or difficulty in pronouncing words. Following a stroke, a patient may find it difficult to control his emotions and start to cry or laugh even at the slightest thing.

How is it that some stroke patients cannot talk but can sing?

If the area that controls speech in the left half of the brain is damaged, a patient will not be able to find words when talking. However, as singing and rhythms are controlled by the right half of the brain, he will be able to sing though unable to talk.

Can reading and writing be affected in stroke patients?

It is common to have reading and writing difficulties following a stroke. A patient will find it hard to recall sounds, shapes of letters and sequences of sounds to form a word. Some may read the word but not understand it.



Thoughts of a patient

My wife takes me outdoors during the weekend in my wheelchair. It makes her feel that she is doing something to help me, but I am sad that she has to push me around.

Why is it that some stroke patients are unable to speak but can understand what others are saying?

This is expressive dysphasia which has come about due to the stroke confining the speech area only to expression. The patient finds it difficult to talk but understands what others are saying. If the patient is asked for his address, he will not be able to answer, but will raise his hand when requested.

The extent of recovery and duration of symptoms will depend on the severity of the stroke, his previous communication style, his motivation and also the support he gets from his family.

When communicating with a stroke patient who has a s peech problem:

Don't act as if he has to be taught everything.
Don't try to teach him.
Don't give children's picture books or story books to him.
Don't speak to him as you would to a child.
Don't raise your voice all the time when talking to him.
Don't ask him to repeat words.
Don't practise writing the alphabet.
Don't speak up for him. Give him a choice.

How can a patient with a communication problem be supported?

- Give the patient adequate time to communicate.
- Provide him clues to help remember a word by showing a picture or saying the first sound of the word.
- Get his attention before talking to him.
- Motivate him to communicate.
- Let him enjoy leisure activities as before the stroke.
- Give him a choice of words when communicating.
- Create an opportunity for communication and let him ask for things.
- Create an opportunity for him to be with his friends.
- Always check with him whether what you understood was correct or not.

GOVERNMENT HOSPITALS WITH FACILITIES FOR SPEECH THERAPY ARE:

The National Hospital of Sri Lanka, Colombo; the rheumatology and rehabilitation hospital, ragama; the Lady Ridgeway hospital for Children, Colombo; the dental (teaching) hospital, peradeniya; and all teaching and Provincial Hospitals.

Patients should take a referral letter from the medical officer of the OPD/Clinic they are attending, to obtain an appointment for speech therapy.

They should also take with them all medical records and things such as hearing aids or spectacles that they use for communication.

What will happen at a speech and language therapy unit?

The speech therapist will assess the patient's condition to find out the type and severity of the communication problem, before deciding on the treatment plan. The therapist will also talk to the patient and his family as to why he is unable to communicate.

The treatment plan will include 20 or 30-minute therapy sessions in the hospital or at home if he is an outdoor patient. The session may either be group or individual, tailored to suit the patient.

Family members will be advised how to communicate with the patient and continue therapy during his leisure time. The therapist may ask care-givers to use pictures, writing, reading, etc., activities that may sometimes seem unusual, to help the patient recall words.

The patient will also be registered at the speech therapy clinic and long-term follow-up arranged with regular clinic visits. It is very important for the family to follow the therapist's instructions for the better recovery of the patient.

It is also vital for family members to remember that the patient can function normally and would not appreciate being treated like a child.

OCCUPATIONAL THERAPY

How does occupational therapy help a stroke patient?

Problems with movement, coordination and perception can make it difficult for a stroke patient to perform his day-to-day activities such as washing, dressing, eating and climbing stairs, which others take for granted. The occupational therapist makes the patient independent as much as possible by training him to do these basic tasks and other activities including shopping and cooking. The occupational therapist can also guide the patient on how to return to his hobbies and leisure activities or take up new ones and learn new skills that may be needed to return to work or overcome problems with memory or concentration. Occupational therapy uses a range of techniques for different situations and disabilities. These may include learning to eat or dress with one hand, using memory aids such as lists or a diary or practising physical or mental skills through crafts and board games. Therapy usually starts with simple activities and moves on to more complicated ones as the patient makes progress.

When should occupational therapy start?

Occupational therapy should start from the very early stages of the stroke.



How can a person with paralysis of one side wear a shirt?

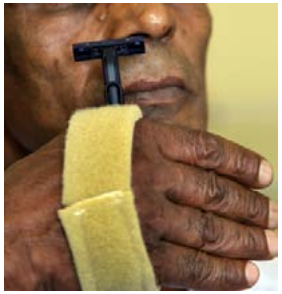
The patient should select garments that are convenient for him to wear such as shirts instead of T-shirts. Take the shirt with the unaffected

hand, put the sleeve onto the affected hand and pull it up. Then take the shirt round the body and slip on the sleeve of the unaffected hand.

How can the patient use the fingers of the affected side?
Support the affected hand with the other and practise fine movements.

How does a patient eat without help?
The patient can hold the spoon with the help of a strap adaptation and practise eating alone.

How does a patient shave without help?
With the same strap adaptation, the patient can hold the shaver with the affected hand and practise shaving by himself. He may also use an electric shaver.



How does a patient write with stiff fingers?
There are adaptations to facilitate the holding of a pen to enable writing.

Should a patient practice occupational therapy at home?

When the patient is to be discharged from hospital, ideally, a home evaluation should be carried out by the occupational therapist to facilitate maximum independence for him in his living environment. The occupational therapist should identify the environmental barriers and the patient's functional limitations within the home environment and recommend adaptations to make him independent.

Provisions from the Ministry of Social Services for the disabled in low-income families are useful in putting adaptations into place. The social service officer on the stroke team will help liaise with the ministry.

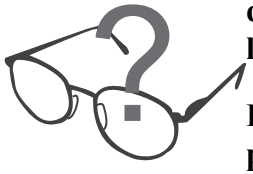
How can a patient with poor eyesight manage daily living?

Often a stroke causes double or blurred vision or partial blindness. The patient may lose his vision in half the visual field which is 180o. He may also have associated weakness, lack of coordination or inability to recognize familiar things or people.

An occupational therapist or physiotherapist can guide the patient through exercises to compensate for or cope with visual disturbance.

Thoughts of a patient
It's a struggle getting dressed, especially wearing the trousers. I get frustrated when trying to bend and do it by myself. I lose my balance easily and fall suddenly.

The aim of occupational therapy is to find practical solutions for disabilities, to make the patient live as normal a life as possible.



How can an occupational therapist assist the patient in his toilet habits?

Lack of control of the bladder and bowel is common after a stroke. This could be caused by nerve damage, loss of pelvic muscle control, change of diet and being bed-bound. The patient may not be able to pass urine (retention), have continuous dribbling, constipation or opening up of the bowels without his knowledge.

The inability to communicate and restricted mobility can make the situation worse.

Most patients regain bladder and bowel control quickly. They

may need guidance on pelvic floor exercises to strengthen muscles and continence aids such as pads and bed covers. Improved walking will facilitate the use of a commode or toilet. The occupational therapist will advise on how the home/toilet can be modified or what equipment, such as a higher level of the seat and side-bars to support standing, will make it easier to use the toilet.

How family members can support a patient at home?

Family and friends can support in many ways by:

- Helping the patient to practice exercises.
- Giving emotional support and keeping him motivated towards long-term goals.
- Adapting to his needs, for example, by speaking slowly and using gestures if he has communication problems.
- Learning techniques to deal with difficult situations, such as how to help him get up if he has a fall.

The most common bladder problems in stroke patients inclde:
Urgency -- feeling a desperate need to pass urne.
Frequency – needing to pass urine often.
Incontinence – not being able to hold the urine until the toilet is reac hed.
Nocturnal incontinence – bed-wetting while asleep.

TIPS FOR CARE-GIVERS

BE PATIENT: rehabilitation is a slow and often frustrating process. don't worry if there are days when little progress seems to be made.

BE POSITIVE: constant encouragement and praise are needed to keep everyone's spirits up.

Get the right balance between helping and encouraging the person To gain Independence and confidence by doing things for himself.

Set a daily routine that everyone can adhere to. build in short but regular periods in the day to practise exercises and learn skills.

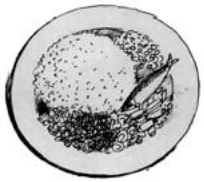
Make time for yourself. seeing friends and having your own hobbies are important to keep your strength and patience.

NUTRITION

Why should a stroke patient be concerned about his diet?

A healthy diet is important in controlling Diabetes Mellitus and high cholesterol, while reducing weight and thereby high blood pressure. This prevents a recurrence of stroke. Regular exercise is also of vital importance.

Why do some stroke patients eat food from one side of the plate but ignore the other side?



A stroke can damage the parts of the brain that are important to interpreting information that the eyes receive. Sometimes, stroke patients lose half of their field of vision which allows them to see everything on one side but make them blind on the other. Others tend to neglect the vision of one side. These can result in clumsiness and what seems to be odd behaviour such as not eating food on one side of the plate.

What kind of food is best after a stroke?

Depending on the associated risk factors and the weight of the patient, a dietitian should advice him on the most suitable diet. For a majority, it will be a low cholesterol diet with plenty of vegetables and fruit. One should aim for at least five portions of fruit and vegetables each day. A portion is about 80 grams (3 ounces). for example, an apple, an orange or a glass of orange juice, a large carrot, a handful of grapes or three tablespoons of peas.

If a patient is a diabetic, that too should be taken into account when preparing his food. The total calorie intake of a patient will depend on his BMI.

What is the suitable diet for a stroke patient who has diabetes?

The diet should contain high fibre and less starch, fat and oil. Direct sugars should be avoided at all times. Small but frequent meals may be more suitable. The total calorie content of the diet should depend on the weight of the patient.

More vegetables and salads should be part of the diet to increase the fibre content. There should be only a limited amount of unrefined starch such as rice or pulses. Red meat such as pork and beef, as well as cheese, butter and full-cream milk should be avoided. Sweets and other food containing sugar should be cut out. It is best if the protein requirement is from fish or chicken or pulses. Fruit instead of sweets should be taken as dessert. Meals should also be taken on time.

If the patient is on diabetic treatment should he control his diet?

Yes, the initial steps in diabetes management are to control the diet and engage in regular exercise to keep the blood sugars down. Drugs that are prescribed by the doctor should be taken regularly and the blood sugar monitored.

Why should patients with diabetes avoid sweets?

As sugar is easily absorbed and leads to an immediate rise in blood sugar, sweets should be avoided and only unrefined starch taken in moderation if the patient is a diabetic. Starch becomes glucose in the digestive system, therefore, eating more, especially refined starch will cause a rise in blood sugar immediately.

Can a diabetic eat plenty of fruit?

No, if the fruit is ripe, the patient should eat only moderate amounts. While it is better to eat half-ripe fruit, dried and canned fruit should be avoided. To have a change, a glass of home-made fruit juice without sugar may be taken.

Can a diabetic eat plenty of vegetables?

Yes, more vegetable portions increase the fibre content and help control the rise of blood glucose immediately after a meal. A high fibre content

provided by vegetables and fruit will decrease fat absorption and form bulky stools. They will also add variety to a meal and help achieve satiety sooner.

Bread or rice – what is better for a diabetic?

Both bread and buns have a high glycaemic value and cause an immediate rise in blood sugar after ingestion. Therefore, it would be better to have food with a low glycaemic value such as rice (unpolished) and legumes/pulses than white bread.

What should be done if the patient feels hungry soon?

If the portion is too small, the diabetic will feel hungry soon. Increasing the vegetable quantity and giving the patient low calorie soups, raw or boiled vegetables and half-ripe fruit in-between the main meals will help.

How is diabetes control assessed?

Diabetes control is monitored by repeated blood tests (assays of fasting, postprandial and random blood sugars and Hb A1C). If the fasting blood glucose is closer to 110mg/dl, one should try to achieve postprandial blood glucose (two hours after lunch) closer to 140 mg/dl. Hb A1C levels are helpful to check the control of diabetes over the last three months. The recommended Hb A1C is 6.5%. It is also important to get regular eye-checks every two years and protein in urine and feet for loss of sensation also checked.

Should artificial sweeteners be used?

It is better to control the taste-buds and avoid artificial sweeteners, using them only sparingly.

Why should stroke patients avoid oil and oily food?

High cholesterol causes the thickening of blood vessels, which in turn leads to the development of high blood pressure. A high oil content in food from saturated fat will contribute to high cholesterol in the blood. Therefore, cutting down on saturated fat is important, especially if the patient is overweight or obese.

What dietary changes will reduce blood cholesterol levels?
In a healthy diet, 30% of the calorie content should be from fat with no more than 10% from saturated animal fat. Therefore, it is better to avoid red meat (pork, beef and mutton), butter, cheese and full-cream milk. Coconut milk and unsaturated fat such as margarine and vegetable oils may be taken in moderation. Fish and chicken are recommended instead of red meat. Egg white and non-fat milk will also be better, while baking instead of deep-frying is recommended.

Can coconut milk be used in the cooking of meals for a stroke patient?
Yes, coconut milk may be used, but will depend on the level of cholesterol of the patient. It is advisable to use thick or "first" milk for curries which have a lot of gravy and light or "second" milk for those with less gravy.
Scraped coconut may be used freely.

Can any oil be used for cooking?
If the diet plan allows the use of coconut milk as a fat provider, do not use any oil in the cooking. Unsaturated oil such as canola, olive and sunflower could be used for frying on and off. Avoid repeated frying with leftover oil.

Should salt be restricted?


Yes, a high salt intake is one of the preventable causes of high blood pressure and triples the risk of suffering a stroke. Therefore, the salt intake should be restricted to 5gm per day (1 level teaspoon). While adding extra salt to home-made food is not recommended, it should be kept in mind that a significant amount of salt also comes from pre-packaged and processed food bought from the market. High salt containing other foods include sauces, French fries, "take away" food such as Chinese food, hamburgers and dried fish.

How can a low salt meal be prepared for a patient within the family meal?
The family meal should be prepared without salt and the patient's portion separated and less salt than usual added to it. The desired amount of salt can then be added to the family meal. Another method can be to add one-third of the portion of salt first, the patient's meal then separated and the balance salt added later to the family meal. It is also important to remember that salt in the diet of family members should also be reduced to prevent strokes and heart attacks.
Do not keep the salt-shaker on the table, to prevent the temptation to sprinkle more salt on the food.

With these restrictions, how can food at functions be enjoyed?
Diabetics should avoid sweets at all functions. If the blood pressure has been controlled for some time, having a snack or some of the food mentioned before, occasionally in small amounts, will not make a big difference. However, controlling the desire to eat what is not healthy is the best way.

How is a low calorie diet prepared for obese/overweight patients?
Avoiding high calorie and concentrated food and preparing diluted diets and increasing fibre through vegetables and fruit are some of the basic concepts in the preparation of a low calorie diet. Kanjees, soups, fruit juices, raw and boiled vegetables, medicinal drinks and non-fat milk could constitute the main components of a low calorie diet.

What are the high calorie foods that should be avoided?
Starchy food – Although we need starch in our diet as the main component, refined starch such as white wheat flour and white rice and yams, jak-fruit, bread-fruit and fruits such as lavulu and ripe jak-fruit should be avoided. Fermented starch preparations including hoppers and bakery products will also fall under this category.
Sweet food – Products which include man-made sugar, treacle or jaggery and chocolates, ice cream, toffees, jams, cakes, biscuits, des-

serts etc., should be avoided as well as overly-ripe, dried or canned fruit. There is a need to refrain from the addition of sugar to meals.

Oily food – Butter, cheese, full-cream milk and milk products, salad dressings, margarine, egg yolk, meat and meat products should be avoided. Other "danger" oily foods include deep-fried fish, cutlets, Chinese rolls, crackers and fried dried fish etc.

Food which has a mix of starch, oil and sugar – Kavum, dodol, muscat, iced cakes, cream biscuits etc., should be avoided.

Junk (fast) food – Cracker-type bites, murukku, carbonated drinks, shorteats etc., should be avoided.

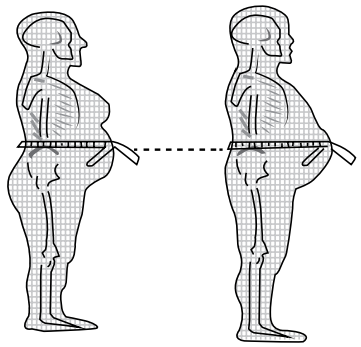
How can the desire to eat be controlled?

Disciplining oneself to have meals on time is important. Adding a meal in-between to make frequent small meals will help avoid a big main meal. Avoid concentrated food such as strong tea or coffee and highly salted and highly spiced products to control the desire to continue eating. Drinking a glass of water before a meal will also help.

Why should special attention be paid to body weight?

A person's weight should suit his height. If the body weight is low or high when it is compared to the ideal weight for that particular height, it is associated with long-term diseases. Malnutrition, cancer or tuberculosis is linked to a low body weight, while overweight/ obese people are more likely to develop high blood pressure, diabetes, heart attacks, strokes and knee-joint problems.

Waist circumference is the better indicator in predicting the risk of stroke and heart attacks.



Waist circumference is checked at the level just above the highest position of the hip bone

What is the ideal waist circumference for Asians including Sri Lankans?

The waist circumference to prevent heart attacks or stroke should be less than 80cm for women and 90cm for men. Regular exercise will bring the waist circumference to the recommended limit.

How will a patient know whether his weight is ideal or not?

The body mass index (BMI) indicates whether a person's weight is ideal for his height.

$$\text{BMI} = \frac{\text{Weight (kg)}}{\text{Height (m)2}}$$

A BMI over 25 is in the "overweight" category and over 30 in the "obese" category. The risk level for chronic diseases such as diabetes, high blood pressure and high cholesterol is higher in obese people when compared to those who are overweight. Everyone should strive to have a BMI below 25.

If a patient's height is 1.6m and weight 65kg, is it acceptable?

$$\text{BMI} = \frac{\text{65 (kg)}}{\text{1.6 (m) x 1.6 (m)}}$$

BMI = 25.4

No, the patient is slightly overweight and should try to reduce it.

How can the BMI be improved?

Lifestyle modifications with regard to diet and exercise are needed to reduce weight and improve the BMI. The total calorie requirement of a person depends on that person's age, gender, job and physical state. It is thought that women need about 1,200 and men about 1,500 calories per day to maintain a healthy life.

In a balanced diet, 55% of this requirement should be from carbohydrates, 15% from protein and 30% from fat of which only 10% should be from animal fat. The healthiest weight-loss regimens include

a balanced diet and moderate physical activity.

If a person is overweight or obese, a low calorie diet and physical exercise are recommended. The daily calorie intake should depend on the extent of obesity and exercise he engages in.

Should a patient with high blood pressure do exercises? Exercise should be introduced gradually, while controlling blood pressure with medications. It is important to maintain regular exercising. However, strenuous exercise is not recommended for those with severe blood pressure.

It is, however, not only those with high BMI but everyone, especially those with sedentary jobs, who should exercise regularly.

The body's activity level should be kept up by waking up early morning, moving the body and increasing outdoor activities. It is important to sleep soundly at night and avoid sleeping during the day.

Thirty minutes of moderate exercise such as walking, cycling, swimming or on a suitable exercise machine should be performed and gradually increased, depending on fitness.

Should a patient with high blood pressure do exercises?

Exercise should be introduced gradually, while controlling blood pressure with medications. It is important to maintain regular exercising. However, strenuous exercise is not recommended for those with severe blood pressure.

How should one begin exercises?

Here are some tips to commence exercise.

The activity selected should be enjoyable to the person. They could be walking, dancing, swimming, cycling or gardening. House hold work such as sweeping the garden and washing the car are good exercises. Whatever the type of exercise it should make the person feel little breathless and sweaty at the end.

Exercises should be commenced slow, especially if the person is not used to physical activity before. Build up gradually to 30 minutes

a day. Just 30 minutes of activity five days a week is enough to reduce the risk of stroke. Do not over do exercises. It need not be done all in one go. It is just as effective to exercise a few times a day in 10-, 15- or 20-minute sessions.

To prevent muscle cramp and stiffness, start with a few minutes warm-up (gentle stretching exercises) and slow down gradually at the end. It would be more enjoyable to do exercises with a fitting partner and vary the routine to keep the mind alert.

Be more active during the day. Find ways of building more exercise into the daily routine such as taking the stairs instead of elevator, walk for marketing instead of taking the three-wheeler, and walk when possible instead of sending messages at the office and get off the bus before the usual stop and walk part of the way.

If exercise leads to develop pain especially in the chest and have difficulty in breathing, stop exercising immediately and seek medical advice.

IF YOU HAVEN'T EXERCISED FOR SOME TIME, ESPECIALLY IF YOU ARE OVER 40 OR HAVING A MEDICAL CONDITION, GET DOCTOR'S ADVICE BEFORE YOU START.

How should progress be monitored?

Taking the weight and recalculating the BMI, while on a controlled diet and engaging in exercise will indicate progress. Despite engaging in adequate exercise, if the weight does not reduce, the diet plan should be reviewed until the BMI is below the acceptable level. Once the goal is reached, it is equally important to sustain the weight through a balanced diet and regular, moderate exercise.

COUNSELLING

Why do stroke patients need counselling?

A stroke occurs unexpectedly and causes physical disability. If a patient is conscious, he will understand the difficulties as the illness takes its course. Then he may become depressed and that will have an impact on his recovery from the physical disability. Positive thinking is important in reaching the set targets during the rehabilitation process. Counselling by a trained counsellor or member of the clergy not only for the patient for better recovery but also for the immediate family members is imperative.

How does a stroke affect a patient and his family psychologically?

For a majority, recovery from a stroke is a long process. Life changes drastically in all aspects such as physical and social functioning, financial concerns, sexual relationships etc. These have an impact psychologically, with the patient feeling anger, despair, frustration and grief leading to anxiety and depression. Poor care of stroke victims can aggravate depression.

If the stroke has injured certain parts of the brain, the patient may find it difficult to control his emotions. There could be dramatic mood swings such as crying or laughing at the wrong time.

Helping to understand and cope with these symptoms and feelings is an important part of rehabilitation. If symptoms are severe or last a long time, the patient may need the help of a psychiatrist or psychologist.

How does a stroke affect the mental processes of a patinet?

It is common for a stroke to cause problems with the mental processes of thinking, concentrating, remembering, making decisions, reasoning, planning and learning. A clinical psychologist can help assess and find ways for him to overcome these difficulties. A patient who has memory loss may need to keep notes about routine things, while another with concentration problems may need to learn to take things slowly and avoid distractions.

How will a counsellor engage a patient?

A counsellor will talk to the patient and the sessions will include an introduction, information gathering, discussion and conclusion.

Intent listening is important during counselling when the patient starts expressing himself. The counsellor will say little but convey much interest and talk only to confirm whether what he heard is correct or he has understood correctly. Body language including facial expressions, the angle of the body, proximity, placement of arms and legs and much more on the part of the counsellor replaces talking. The counsellor's tone of voice will also be important to encourage the patient to talk. The counsellor should keep in mind that the patient will not remember what was said but how he was made to feel.

Open questions for which long answers are expected will give more information to the counsellor than closed questions which will elicit single-word answers. Closed questions should be used when the counsellor needs a specific answer.

The counsellor may use paraphrasing, restating what the patient said, to draw attention to a particular concern or aspect in his story. Summarizing the main points of the conversation giving the "gist" is also a good counselling technique.

"I have paralysis of the left hand and leg. Doctors say I am stressed. Is it a stroke?"

Sometimes a person under heavy mental stress may develop symptoms of a stroke. He may not be aware that the symptoms are caused by the mind being tense. These symptoms can be cured by counselling.

What can be gained from counselling?

Counselling strengthens the mind of the patient to face the problems and difficulties of day-to-day life better. It enables him to take precautionary measures to avoid future risks by recognizing them in advance. It gives mental relief and comfort and thereby happiness. Counselling helps a

majority of stroke patients who are affected by disabilities to face the challenges better.

”For some people, it is a relief just to have someone to talk to. it is good to play that supporting ROLE, BECAUSE many people think that they are helpless when they become disabled.”

“Psychological counselling enables a person to develop a personality that will be able to bear up various psychological problems which crop up due to certain unexpected events or incidents. It also prevents psychiatric conditions. Treatment with medication or psychotherapy gives added benefits to some patients.”

A COMBINATION OF MEDICATION AND PSYCHOTHERAPY OR COUNSELLING IS OFTEN THE MOST EFFECTIVE TREATMENT FOR DEPRESSION

Exhausted and depressed that exercises do not help – what advice should be given to a stroke patient?
However natural it is to feel depressed and anxious, negative feelings will get in the way of progress. Therefore, it is important for a disabled person to focus on what he wants to achieve and stay positive.

Here are some tips for patients and care-givers

- The patient should practice, between therapy sessions, the tasks therapists have taught, without exhausting himself.

- There is a need to understand why each task has been set. This will help keep the patient motivated. Remember that recovery is gradual and even when progress is slow, it is worth persevering.
- Don’t push people away. Talking or just being with other people even if the patient has difficulty in communicating, will prevent him becoming isolated and withdrawn.
- Plenty of sleep, a good diet and regular physical exercise are important.
- Don’t despair if previous abilities are not regained fully. Enjoy the quality of life and the independence left.

What are the special counselling techniques available for stroke patients?
The special therapy techniques for patients include:
Art therapy Music therapy
Simple relaxation
These techniques which can be practised at home or as a group at the stroke unit will be most useful to patients who have made some recovery after a stroke.

How does art therapy work?
Art therapy is a good form of physical and mental exercise for stroke patients. Those with normal hand functions are requested to draw what They like on paper, using colours of their choice. The expression of their feelings gives relief from despair.

Clay therapy, wash-up exercises and paper meditation are other art therapy techniques that can be used for stroke victims.

How does clay therapy help a stroke patient?
Clay therapy can be used either at the hospital or at home. It improves the mental functions as well as the physical activities of the patient. At clay therapy, a patient is given some clay and asked to scramble it by passing it from hand to hand. Then he is asked to make a figure that is close to his heart and explain it. This can be repeated several times depending on the acceptance of the technique by the patient. While

the exercise helps the movement of the fingers, the therapy also gives psychological relief.

How does music therapy help a stroke patient?

In an ideal setting, trained music therapists use music and all its facets – physical, emotional, mental, social, aesthetic and spiritual -- to help patients improve or maintain their health.

Music therapy is associated with a decrease in depression, improved mood and reduction of anxiety. While increasing the patient's motivation and positive emotions, it reduces hatred and aggressive feelings, fear and anger. Thereby, the patient is driven to participate in therapy sessions leading to a better outcome.

In general, what is practiced is listening to soothing music either at the hospital or home. The patient should lie or sit comfortably and meditate for a few minutes before listening to music of his choice such as classical, pirith or natural sounds.

How can family members help the stroke patient to keep his mind calm?

The family environment should be pleasant and compassionate and the members should show love and affection to the patient. While not keeping the patient alone, discussions at home should be pleasant.

Counseling services – where are they available?

There are about 100 counseling officers attached to the Divisional Secretariats island-wide, available on Mondays and Wednesdays. Doctors can refer patients to them as they provide both individual and family counseling.

A STROKE CAN STRIKE ANYONE AT ANY TIME. ONE IN EVERY SIX OF US WILL DEVELOP A STROKE DURING OUR LIFESPAN. SOME PEOPLE ARE MORE AT RISK THAN OTHERS.

LONG-TERM CARE

How would life be after a stroke?

After leaving hospital, a majority of stroke patients will need ongoing rehabilitation at home. Some may have a physical disability making it difficult for them to attend to simple tasks, while others may have speech, vision or swallowing problems. When they are at home, they may become depressed and develop mood swings. Therefore, it is very important for care-givers to learn about the patients' disabilities before they are discharged from hospital.

The care-giver should let the patient attend to his work alone as much as possible and assist him only when he needs help. For further recovery, the patient should continue his physio, speech and occupational therapy long term even after discharge from hospital. Both patient and care-giver should have patience as stroke recovery is slow and continues even after two years.

Can a patient engage in routine activity after a stroke?

While a significant proportion improves completely, about 30% with a mild disability will be able to be independent in a different manner. Re-learning abilities and skills and using adaptations such as walking-aids will be vital for them. Another 30%, however, will have to depend on others for their day-to-day activity.

When can a patient return to work?

Returning to work after a stroke will not only depend on the employment but also on the disability and the extent of recovery.

Many people feel tired after a stroke and find it difficult to concentrate and engage in physical activity for some time. It would be best to discuss how soon the stroke sufferer should get back to work, with the doctor and the employer.

The patient may return to his old job if he feels well enough and his disability can be accommodated within the same employment.

Otherwise, he should seek another job under the same employer or a different employer. A person with a vision problem will not be able to continue driving but do work at the office. If this is not possible, self-employment should be considered.

Can a patient drive after a stroke?
It would be better for a person who has suffered a stroke or TIA not to drive in the first month after the attack.
Whether he can drive after that will depend on the long-term disabilities the stroke has caused and what sort of vehicle he drives. A person needs good vision in both eyes and well-functioning hands and legs for driving. It would be best to discuss these issues with the doctor.
If the patient develops a fit along with the stroke, he is not supposed to drive heavy vehicles for ever and a light vehicle for a year after the attack .

When can a stroke patient resume sex?
Patients are encouraged to resume sexual relations soon after a stroke. However, it may take time to regain their sex drive, while some with limb weakness and stiffness may find it difficult to get into a position of intimacy. Men may have a problem with erection because of the stroke or certain medications and these problems can be overcome with advice and help from the doctor.

When is it safe to travel by air?
If the stroke was caused by a bleed into the brain or if the patient is left with a disability following the stroke, it is not advisable to fly for 2-3 months. If the attack was a TIA, the patient may be allowed to fly after 10 days, once all the risk factors are brought well under control.

Are there social support agencies for disabled stroke victims?
The Ministry of Social Services, through the Divisional Secretariats, provides social support for disabled stroke patients. Doctors should refer the disabled patient to a social worker available at the hospital or the Divisional Secretariat. Patients could liaise with the Divisional

Secretariat through the Grama Niladari in his area.

What help can be expected?
Once the patient's needs have been assessed by the social worker, he will be given information on the services available.

They are:

Housing grants - The patient may apply for a Rs. 250,000 grant to construct a house or improve an existing one. The payment for the roof is Rs. 45,000, floor Rs. 15,000, walls Rs. 30,000, doors and windows Rs. 20,000 and kitchen Rs. 20,000. The applications for these grants are available at the Divisional Secretariats. Disabled stroke victims who have a monthly income less than Rs. 6,000 per month and own a block of land are eligible to apply.

Grants to install accessibility facilities in homes – A patient can apply for a grant of up to Rs. 15,000 to develop access from the house to the road.

Construction of a toilet with a commode – A disabled patient can apply for a grant of up to Rs. 20,000 to construct a toilet with a commode.

Self-employment assistance – Those whose income is less than Rs. 6,000 per month can apply for self-employment assistance of up to Rs. 25,000. Along with the application to the Divisional Secretariat, the disabled patient should submit an estimate of the monies needed to begin the self-employment project.

Medical assistance for surgery – There are grants of up to Rs. 20,000 if a disabled patient needs surgery. A request along with supporting documentation on the need and the cost of the surgery should be submitted.

Funds for medicine and assistive devices – Grants of up to Rs.

20,000 are available to buy medicine from Osu Sala outlets, while wheelchairs, tricycles, crutches, spectacles and eye lenses are available for the needy. Applications should be made along with the recommendation of a medical professional.

Payment of Rs. 3,000 under Mahinda Chintana Programme
– Families which have a severely disabled breadwinner and an income less than Rs. 3,000 per month get priority in accessing this payment.

Are there vocational training programmes for the disabled?

There are 19 Vocational Training Centers which conduct 32 vocational training programmes. If the stroke victim is between 18-35 years of age, he is eligible for these programmes. During training, the disabled person will be provided free accommodation, food and Rs. 50 per day, while at the conclusion of the programme he will be given a tool kit valued at Rs. 10,000.

Stroke is the major cause of adult disability and a leading cause of death in Sri Lanka, but the country lacks medical professionals and infrastructure facilities to deal with this major health issue. This book is a minute effort to compensate deficiencies.

Thoughts of a stroke patient ……..
I can't believe that I can get back to what I was. But I now know that at least I'm not going to be a vegetable. I'm grateful for that.

PREFACE

'Stroke Care" written in all three languages is the final outcome of a collective effort of the Stroke Care Team of the National Hospital of Sri Lanka. It elaborates a step-by-step approach in the emergency management, rehabilitation and prevention of stroke for all stroke care-givers. It is written for the National Stroke Association of Sri Lanka for its commitment towards improving the knowledge and practices of stroke care in the country.

I am glad to note that all the proceeds generated from the sale of the book will be remitted to the Stroke Care Development Fund of the National Stroke Association of Sri Lanka.
I am most grateful to all the contributors without whom this book would not have become a reality. I humbly recall the encouragement extended by the Members of the Executive Committee of the National Stroke Association of Sri Lanka and the assistance of my ward staff and my family in compiling this book.

I am thankful to …… sponsors for their generous contribution towards printing. I believe the book has something for everyone, from the patient to Consultant Physician.

May the 'Stroke Care' book be the bible of all stroke victims and care-givers who at present face battle stroke without the bare minimum of a decent stroke-care service.

Dr. Padma Gunaratne
President (2009 – 2012)
National Stroke Association of Sri Lanka

This book is written and compiled by -

Dr. Padma Gunaratne MD (SL), FRCP (Glasg), FRCP (Edin), FRCP (Lond), FCCP, FRACP (Hon) who is a Consultant Neurologist attached to the National Hospital of Sri Lanka; President, National Stroke Association (2009 – 2012) and Member, Board of Directors, World Stroke Organization.

Dr. Jeevantharan Hamsananthy MBBS, MSc (Com.med).

Mrs. Thushari Anuruddhika, Dip. in Nursing, BSc. Nursing (Hons.).

Mr. Ruwan Pathirana Premalal, Dip. in Physiotherapy.

Mrs. Saumya Rathnayake, BSc. in Speech and Language Therapy.

Mr. Nandana Welage, Dip. in Occupational Therapy, MSc. in Occupational Therapy (Hong Kong).

Mr. D.H. Liyanage, BSc. (Hon.) Nat. Sc.

Miss. Renu Shiromala Karunamuni, B.A. , M.A.(Sin) Kelaniya, Post-graduate Diploma in Counselling (Colombo), Post-graduate Diploma in Bhuddhist Ayurvedic Counselling (Kelaniya), M.A. (B.A.C) Kelaniya. Pl inquire me to find the name Renu Shiromala Karunamuni

Mrs. Yamuna Chithrangi, former Secretary of the Ministry of Social Services.

The team headed by Dr. Gunaratne was assisted in the editing by Senior Journalist Kumudini Hettiarachchi.

The photographs are by M.A. Pushpa Kumara and Dr. Shanaka ……., while the graphics are by Indramurthi Jayasuriya who also formatted the book.

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