UNDERSTANDING TRANSIENT ISCHAEMIC ATTACK (T.I.A.) AND MINOR STROKE
Chest Heart & Stroke Scotland aims to improve the quality of life for people in Scotland affected by chest and heart conditions and by stroke, through research, influencing public policy, advice and information and support in the community.

The information contained in this booklet is based on current guidelines and is correct at time of printing. The content has undergone peer, patient and expert review.

If you have any comments about this booklet please email: publications@chss.org.uk or tel: 0131 225 6963.
UNDERSTANDING TRANSIENT ISCHAEMIC ATTACK (T.I.A.) AND MINOR STROKE

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WHAT IS A TIA?
A transient ischaemic attack is called a TIA for short.

Transient: The symptoms are very similar to those of a stroke but the difference is that they are temporary.

Ischaemic: Ischaemic is the term used to refer to insufficient blood supply.

Attack: A TIA comes on suddenly and can last for anything from seconds or minutes to hours. It does not last longer than 24 hours.
WHAT IS A MINOR STROKE?
After 24 hours has elapsed, and symptoms persist, then it becomes a 'minor' or 'small' stroke. Any stroke is frightening and very significant if it is happening to you; the term minor is used because it refers to minimal damage.

Never ignore the symptoms of a TIA
Never ignore the symptoms of a TIA. They might be warning signs of a stroke, which could be avoidable with treatment.

Even if symptoms are mild and pass quickly you should seek medical advice.

There is a higher risk of stroke in the first week after a TIA.

Ideally some investigation and treatment should be delivered on the day of symptoms starting and you should see a specialist within no more than 7 days, preferably sooner.
What is FAST?
FAST is a quick reference tool used to help people recognise the symptoms of TIA and stroke. FAST requires an assessment of 3 specific symptoms of stroke. It is used by the ambulance service to help to determine what is the best course of action to take.

This means that you can access specialist care as soon as possible.

**Facial weakness** – can the person smile? Has their mouth or eye drooped?

**Arm weakness** – can the person raise both arms?

**Speech problems** – can the person speak clearly and understand what you say?

**Time to call 999**
If a person has failed any of these tests it is crucial to call 999. Stroke is a medical emergency and by calling 999 you can help someone reach hospital quickly and receive the early treatment they need.
WHAT ARE THE MOST COMMON SYMPTOMS OF A TIA OR MINOR STROKE?

Focal symptoms
(focal relates to the specific area within your brain)
• weakness, numbness, clumsiness or pins and needles on one side of your body for example face, arm or leg
• loss of, or disturbed vision in one or both eyes
• slurred speech or difficulty finding words.

Non-focal symptoms
There are other symptoms which may accompany the above such as:
• faintness, non-specific dizziness, light headedness
• confusion, mental deterioration
• incontinence
• drop attacks or syncope

However they do not suggest a TIA unless they are clearly accompanied by focal symptoms.

What else could it be?
The sooner you are investigated the more likely your doctor will be able to say whether it was a TIA or not. There are also other possible explanations for symptoms, so it is vital that the cause is investigated. Migraine, epilepsy, anaemia and heart arrhythmia can all give similar symptoms and all need to be treated.
WHAT CAUSES A TIA?

Basically, as in a stroke, the blood supply to your brain is interrupted for some reason. In a TIA the blood supply to your brain has been temporarily cut off by a blockage in a blood vessel. This means that the area of your brain that the affected blood vessel was supplying is deprived of oxygen and disrupts the function of the cells involved. When the blood supply is re-established the symptoms pass. If the disruption to the blood supply is permanent, it may result in a stroke.

This can happen for two main reasons:

• Atheroma is the build up of fatty tissue in the wall of your blood vessel, narrowing the space that blood can get through, or temporarily blocking the flow altogether.

• An embolus is a blood clot or particle of debris that travels round your body in the bloodstream until it becomes stuck in a narrow blood vessel in your brain. This could have been actually produced in one of your blood vessels.

What contributes to this happening?

There are certain situations that can contribute to these events, some of which you can control and some you cannot.

Lifestyle changes you can make to help reduce your risk of TIA and stroke are outlined later.
High blood pressure
Uncontrolled high blood pressure is one of the most important risk factors for TIA and stroke. Over a period of time sustained high blood pressure can cause damage to your blood vessels. Unfortunately there are not any symptoms to alert you to high blood pressure. It is often only discovered as a result of investigating something else, or in a routine examination. Once it has been established that you have high blood pressure it is vital to control it.

See the CHSS booklet ‘Living with high blood pressure’ for more information.

Blood stickiness
The stickiness of your blood itself can affect the likelihood of a clot forming. This can be influenced by many other factors and can be assessed by blood tests.

Health of your blood vessels
There are several factors that play a part in the general health of the blood vessels involved. Narrowing of your blood vessels is a natural part of the ageing process, which we have no control over. High blood pressure, high cholesterol levels and diabetes can all affect the health of blood vessels over a period of time. So it is important to know about and control these conditions as much as possible.
HOW IS A DIAGNOSIS MADE?

You will be likely to be seen by a stroke specialist either at the hospital or at a TIA clinic.

You will be asked about your symptoms, what they were, how long they lasted and if they have happened before.

Tests and investigations will be done to check your heart, the state of your arteries and identify any other factors that may have contributed. Based on the results of these tests and by ruling out other possible causes of your symptoms a diagnosis can be reached.

What tests will I need?
The following are some of the tests which may be considered necessary for you. It is unlikely for someone to need all these tests – your doctor will decide which ones are appropriate for you. Ask to speak to the doctor about your diagnosis and test results.

Blood tests
These can be used to check for certain conditions that may have contributed to your TIA or minor stroke, such as diabetes or problems with blood clotting.

Chest x-ray
This looks for underlying conditions such as heart or chest complaints that may have contributed to your TIA or minor stroke.
**Electrocardiogram (ECG)**
This test measures the rhythm and electrical activity of your heart. Irregular heart rhythms can cause TIA or minor strokes and need to be treated.

**Echocardiogram**
This is an ultrasound scan of your heart, which may be helpful in detecting any underlying heart problem that might have contributed to a stroke.

**Brain scans**
There are 3 possible scans you might have if a stroke is suspected.

What is best for you is decided on an individual basis depending on many things such as your specific symptoms and how long since symptoms started. The aim is to help make a diagnosis, locate the area affected and exclude other conditions that may have caused symptoms.

- **CT (computed tomography) scan**
  It is a special type of x-ray using a scanner and computer equipment to take pictures of your brain.

- **Magnetic resonance imaging (MRI) scan**
  It uses strong magnetic fields and radio waves to take pictures of your brain.

- **(Carotid) Doppler or Duplex ultrasound scan**
  This scan is used to find out whether narrowing in the carotid arteries (blood vessels in your neck) could have caused your symptoms. This is necessary prior to carotid surgery.
UNDERSTANDING YOUR TREATMENT

The main aim of treatment is to reduce your risk of a further TIA or possible stroke.

The same risk factors apply to stroke and heart disease. This is called cardiovascular risk.

**Antiplatelet treatment**

If a TIA or a stroke is caused by blocking of a blood vessel most people are prescribed some form of antiplatelet medicine.

Platelets are blood cells that clump together to make the blood clot (thicken). If a blood vessel is damaged platelets stick together to form a blood clot to stop the bleeding.

Antiplatelet medicines reduce the ability of the platelets to stick together and form a blood clot.

Two common antiplatelets offered to people who have had a TIA are aspirin and clopidogrel. Aspirin may also sometimes be taken with another antiplatelet medicine called dipyridamole because this can be more effective than taking these medications separately.
**Anticoagulant treatment**

You may be at risk of a TIA or stroke if you have an irregular heart rhythm such as atrial fibrillation. This is because a blood clot can enter your bloodstream from your heart. In this case it is likely that you will be prescribed an anticoagulant such as warfarin or one of the direct oral anticoagulants (apixaban, dabigatran, edoxaban and rivaroxaban). Anticoagulants work by preventing blood from clotting and so reducing your risk of TIA or stroke. However, as it has this effect on all blood clotting there are associated dangers of bleeding. Treatment with warfarin requires careful monitoring and is not suitable for everybody.

See the CHSS factsheet ‘Oral anticoagulants’ for more information.

**Lowering high blood pressure**

Controlling high blood pressure involves taking regular medication as prescribed by your doctor; regular blood pressure readings and lifestyle changes. There are many different types of drugs used to do this. If one does not suit you there are others to try so it is important to tell your doctor about any side effects. It is very important to take your tablets regularly and not to stop taking them suddenly. Eating a healthy diet, reducing salt intake, losing weight, increasing your physical activity and moderating your alcohol intake can all be helpful in lowering high blood pressure.

See the CHSS booklet ‘Living with high blood pressure’ for more information.
Controlling diabetes
If you have diabetes you are considered to be at high risk of developing heart disease or stroke compared to those who do not. Uncontrolled diabetes causes damage to your blood vessels and the build-up of fatty deposits in your arteries, which increases the risk of heart disease and stroke. If you have Type 2 diabetes you are also more likely to have high LDL (‘bad’) cholesterol and high blood pressure. So screening for diabetes and controlling it effectively is very important.

See the CHSS factsheet ‘Diabetes: links with heart disease and stroke’ for more information.

Lowering cholesterol
Having a high cholesterol level can contribute to the build up of atheroma in your blood vessels. If your cholesterol is found to be high you will be given advice about how to reduce your cholesterol such as by making changes to your diet and increasing the amount of exercise you do. After a TIA or minor stroke it is likely that you will be asked to take a medicine called a statin, which is used to lower the amount of cholesterol in your blood. You may need to take a statin even if your cholesterol is not high. This is because evidence has shown benefit in reducing your risk of stroke.

See the CHSS factsheet ‘Cholesterol’ for more information.
Carotid surgery
If your symptoms suggest that the area of your brain called the carotid territory is involved you may have an ultrasound scan of the carotid arteries in your neck. This is to see if you would benefit from an operation called carotid endarterectomy and should be carried out as soon as possible after the onset of your symptoms.

Carotid endarterectomy is performed to clear a narrowed carotid artery of debris. It allows blood flow to be restored and can reduce your risk of a further stroke.

Both carotid arteries can require surgery but this would not be performed at the same time. As this operation carries its own risks it is not suitable for everyone.

See the CHSS factsheet ‘Carotid endarterectomy’ for more information.
WHAT ELSE CAN I DO TO REDUCE MY RISK?

The same risk factors apply to stroke and heart disease. This is called cardiovascular risk.

Anyone who has had a TIA is at greater risk of stroke. There are several things that you can do to reduce your risk.

See the CHSS booklet ‘Reducing the risk of stroke’ for more information.

Stop smoking

Cigarette smoking damages the lining of your blood vessels, increases your blood pressure, makes your blood stickier and is linked to many other serious health problems. Stopping smoking can be difficult, so seek help from your doctor or practice nurse.

Smokeline is Scotland’s national stop smoking helpline – call free on 0800 848484.

See the CHSS factsheet ‘Smoking’ for more information.

Eat a healthy, low fat diet

Tips for eating a healthy balanced diet include:

• Eat at least 5 portions of fruit and vegetables each day.
• Eat more beans and pulses and less red or processed meat.
• Fill up on fibre - choose wholegrain or higher fibre foods.
• Eat 2 portions of fish a week, one of which should be an oily fish such as salmon or mackerel.
• Reduce your fat intake, especially saturated fats. Choose healthier oils, such as rapeseed, sunflower or olive oil.
• Eat less sugar
• Limit your salt intake.
• Keep well hydrated - try to drink at least 6-8 glasses of nonalcoholic fluid a day.

See the CHSS factsheet ‘Healthy eating’ for more information.
**Reduce alcohol intake**
It is important to moderate your alcohol intake because drinking heavily:

- increases your blood pressure
- affects your cholesterol level
- can make you gain weight

Binge drinking – drinking large amounts over a short period of time – is particularly harmful and can increase your risk of a heart attack or stroke.

**Recommended Daily Limit**
There is no safe level of alcohol to drink. However, if you do choose to drink alcohol you can keep your risk low by drinking within the recommended limits.

- Men and women should not regularly drink more than 14 units per week
- Avoid binge drinking
- If you do choose to drink 14 units in a week, don’t save it all up to drink in one session.
- Spread it over 3 days or more, and have at least 2 alcohol-free days each week.
Remember that the strength of drinks varies a lot and home measures are often more generous than those in a pub or restaurant.

For further information and support, speak to your GP or practice nurse, or visit www.drinkaware.co.uk or www.alcohol-focus-scotland.org.uk.
Increase physical activity
Taking more exercise brings many benefits. It lowers your blood pressure, helps to control your weight and helps reduce your cholesterol level. It increases a feeling of well-being and helps you to cope with stress. Walking and swimming are among the best forms of exercise but increasing your activity in any way that suits you is the important thing.

Control your weight
Being overweight has an effect on your blood pressure, cholesterol level and contributes to diabetes. It may also make you less able to exercise. All of these things are risk factors in their own right.
What about the future?
Unfortunately there are some people who have a TIA or a stroke without having any of the more obvious risk factors.

However, it is important to be aware of stroke related symptoms and seek medical help immediately. Keeping yourself as healthy as possible and taking any recommended drug treatments will help to reduce your risk of TIA and stroke.

Your doctor will help you to identify the risks that apply to you and monitor you in the future. Positively changing your lifestyle will help to reduce the risk of further illness for you and your family.
Do you have any questions about chest, heart or stroke illness?

Ask the nurse
0808 801 0899

www.chss.org.uk

Call FREE from landlines and mobiles

Understanding Transient Ischaemic Attack (T.I.A.) and Minor Stroke
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