Summary

- Stroke is rare among children, with only two in every 100,000 children being affected worldwide each year.
- The most common cause is blood vessel problems in the brain.
- Symptoms of stroke in children include seizures, fever, speech impairment and paralysis.

Children and newborn babies can develop a stroke. A stroke is the interruption of blood to the brain. The brain cells in the immediate area die and those in the surrounding areas are affected by the reduced blood flow. Once brain cells die, their functions die with them. The causes of childhood stroke are not well understood, but are thought to include blood vessel problems in the brain and clots travelling from the heart.

Stroke is relatively rare among children. It is thought that around two out of every 100,000 children are affected worldwide each year. Most cases occur in children under two years of age. More research is needed to better understand both the causes and the effects of stroke in children.

Types of stroke

There are two main types of stroke:

- **Ischaemic stroke** – an embolism (either a clot of blood or a piece of debris) blocks a blood vessel in the brain, interrupting blood flow.
- **Haemorrhagic stroke** – a ruptured blood vessel bleeds into the brain. In newborns, bleeding into the space surrounding the brain can occur and this is called a subarachnoid haemorrhage.

Symptoms of stroke in children

Children often experience different symptoms of stroke to adults. These can include seizures, headache and fever. However, many of the symptoms of stroke in children are similar to those experienced by adults.

Strokes that occur in babies often show themselves as seizures, but they can be missed until parents notice later that the baby has difficulty moving a part of their body. Sometimes, strokes may affect the way a baby is developing.

Toddlers or older children may develop sudden signs such as:

- weakness in an arm or leg, especially on one side. This can cause difficulty with walking, standing and/or using the affected arm. For older children this may also include numbness in the arm or leg.
- difficulty talking, understanding, reading, writing, or concentrating
- trouble seeing in one or both eyes
- dizziness, loss of balance or poor coordination
- difficulty swallowing including drooling
- severe or unusual headaches, nausea and/or vomiting
- occasionally, strokes can cause children to collapse, to change behaviour or to have a seizure.

If you notice any of these signs, seek immediate medical attention.

Causes of stroke in children

It is currently thought that around a half of all strokes in children are due to blood vessel problems in the brain, while a quarter are due to clots travelling from the heart. In around one-quarter of children, no cause can be found.
A number of medical conditions can increase the chance of your child having a stroke. These include:

- some types of heart disease or heart surgery
- abnormal or inflamed blood vessels in the brain
- blood clotting problems
- low blood count
- central venous catheters
- some types of cancer
- recent major infections around the ear sinuses or nose
- some viral infections (for example research has shown that chickenpox may cause ischaemic stroke in children)
- head injury
- dehydration
- prolonged low blood pressure
- brain tumours
- other conditions such as sickle cell disease and thalassaemia.

About a quarter of all children who have had a stroke do not have any of these risk factors. It is unknown why these children have strokes.

The cause of stroke in newborns is usually unknown. Risk factors include pregnancy complications, difficulties at birth, blood clotting disorders and heart problems. Discuss with your doctor your child's risk factors and the potential causes of the stroke.

**Treatment of stroke**

Treatment of stroke in a hospital is similar in both children and adults, and can include:

- drugs that make the blood thinner and less likely to clot (such as aspirin). These may be considered for children who have had an ischaemic stroke.
- some children with haemorrhagic strokes, but not all, may require surgery to the brain if they have reduced consciousness (for example, are not awake or alert) or if the blood is building up and causing pressure in their brain.
- treating any underlying or associated illnesses
- investigating and treating the cause to prevent further attacks
- rehabilitation.

**Long-term effects of stroke**

A child surviving stroke will have to live for more years with functional limitations and disability than an adult. Around 20 to 40 per cent of children have recurrent strokes and 50 to 85 per cent of survivors of stroke will be left with long-term problems. These may include:

- epilepsy
- movement disorders
- learning disabilities
- mental retardation.

**Seek urgent medical attention**

Stroke is a medical emergency. If your child experiences symptoms such as seizures, loss of speech or paralysis, seek urgent medical attention.

**Where to get help**

- Your doctor
- National Stroke Foundation StrokeLine Tel. 1800 787 653
- **enableme** - The Stroke Foundation - Get the information, tips & techniques to equip you in your stroke recovery.
- In an emergency, call triple zero (000)
- If your child experiences symptoms of a stroke, get them to your nearest hospital emergency department.

**Things to remember**
- Stroke is rare among children, with only two in every 100,000 children being affected worldwide each year.
- The most common cause is blood vessel problems in the brain.
- Symptoms of stroke in children include seizures, fever, speech impairment and paralysis.

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