

Lesson Plan

NEUROHEADWAY

Neuroscience Into Education

Stroke – KS2

Introduction to the topic

- Brain is body's most important and most complex organ.
- Shortly introduce brain cells, signal transport and function of different brain areas.
- Simple activity: ask the class to close eyes, then open them. Which brain area is activated (visual cortex).

Slide 2/5 min

- Discuss how to take care of our brain.
- Ask class to give examples for healthy life style, exercise and mental care

Slide 3/5 min

- Explain the importance of blood circulation and brain functioning. Brain cells need glucose and oxygen, which are provided by circulation.
- Give examples of two main types of stroke: 1) brain ischemia which is caused by a blockage of vessel and 2) hemorrhage which is caused by bleeding.
- Stroke causes a severe brain damage that is usually seen in impaired motor functions and memory problems.
- Severity of functional impairment varies depending on size and location of damage.
- Show video clip.

Slide 4/2 min

- List shortly the known risk factors for stroke.
- Note that some risk factors can be controlled.

Slide 5/5 min

- List the symptoms of stroke.
- Video clip.

Slide 6/15 min

- Go through the most typical symptoms.
- Ask voluntary students to act these, the others can guess.
- Explain that stroke is medical urgency and you should immediately ask help. Time is brain - 2 million brain cells is lost per minute after stroke!
- Ask if somebody has personal experiences in family or neighborhood.

Slide 7/5 min

- Explain how stroke patients are taken care in hospital.

- The number and variability of problems means that multidisciplinary team is needed to take care of stroke patients.
- Ask the class to give examples which kind of expertise is needed (e.g., doctors, nurses, physiotherapist, speech therapist, occupational therapist).

Slide 8/5 min

- Discuss the variable brain repair mechanisms and emphasize that brain is plastic and can be rewired by intensive and repetitive training.
- Show a video clip.

Slide 9/5 min

- List some of the rehabilitation approaches.
- Emphasize that the aim is to improve independency of stroke patients.
- Discuss the importance of stroke in our society. It is the leading cause of adult disability, it is expensive problem. Thus there is a need for better therapies. Active research is necessary.

Take a home message:

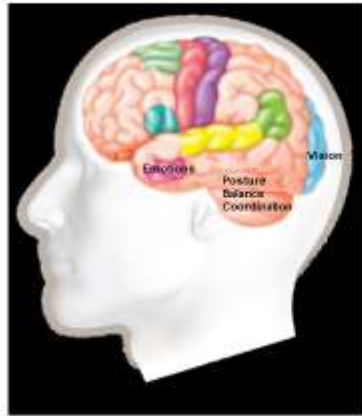
- 1) take care of your brain,
- 2) know how to recognize stroke symptoms and what to do, and
- 3) Brain is plastic and can be rewired by intensive rehabilitation after stroke.

Power point Example

NEUROHEADWAY

Neuroscience Into Education

Brain



Brain — the body's most complex organ.

Every thought and action is controlled by the brain.

Neurons and supporting glial cells are main brain cells.

Transmitters take information from neuron to neuron, from brain area to another.

The brain is divided into functional units with special tasks (e.g., processing visual information, coordination, emotions).

Our brain cells need care!



Life style

- Healthy food
- No smoking
- No drinking, drugs

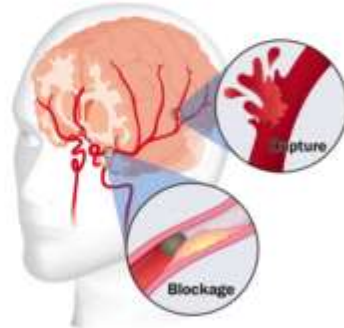
Exercise

- Sport, gym
- Every day

Mental care

- Hobbies
- Friends
- Family

What happens in stroke?



Our brain cells need oxygen and glucose, which are provided by blood flow.

Blockage of vessel or bleeding prevent blood flow to the brain and causes severe damage.

Who gets a stroke?

We do not know exactly who, but a number of variables (risk factors) are associated with an increased risk of stroke.

- Age, gender, family history
- Diabetes
- Blood pressure, high cholesterol, smoking, overweight, lack of exercise

What to do and why?

F

FACE: Ask the person to smile. Does one side of the face droop?

A

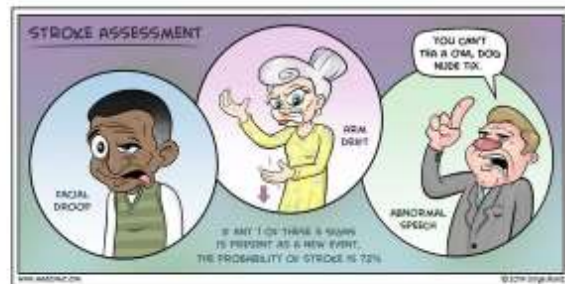
ARMS: Ask the person to raise both arms. Does one arm drift downward?

S

Speech: Ask the person to repeat a simple phrase. Is their speech slurred or strange?

T

TIME: If you observe any of these signs, call 999 immediately.



What happens in hospital?

Occluded vessel can be open by medicine or mechanical retrieval. The stroke patients have often problems in communication, movement and memory.



Multidisciplinary team is needed to take care of stroke patients.