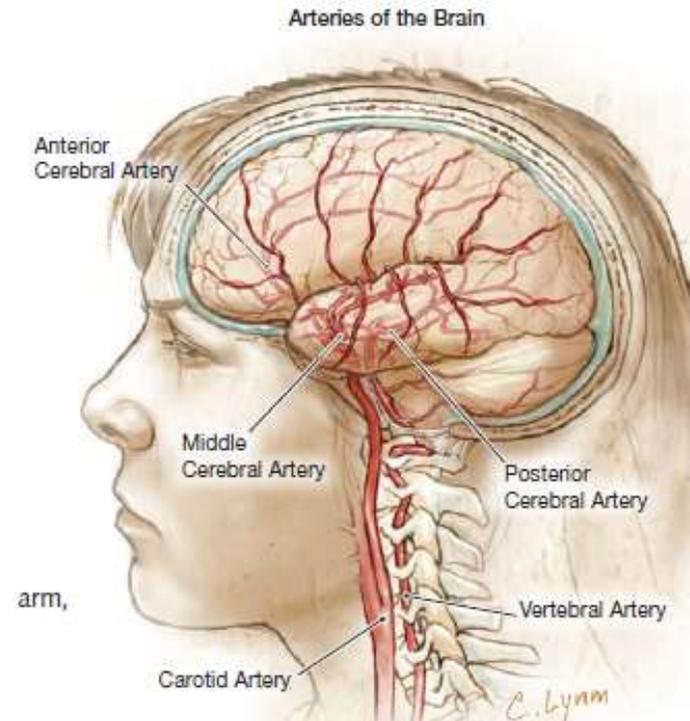


STROKE PREVENTION AND LIFE AFTER STROKE

Dott. Vatri Marco

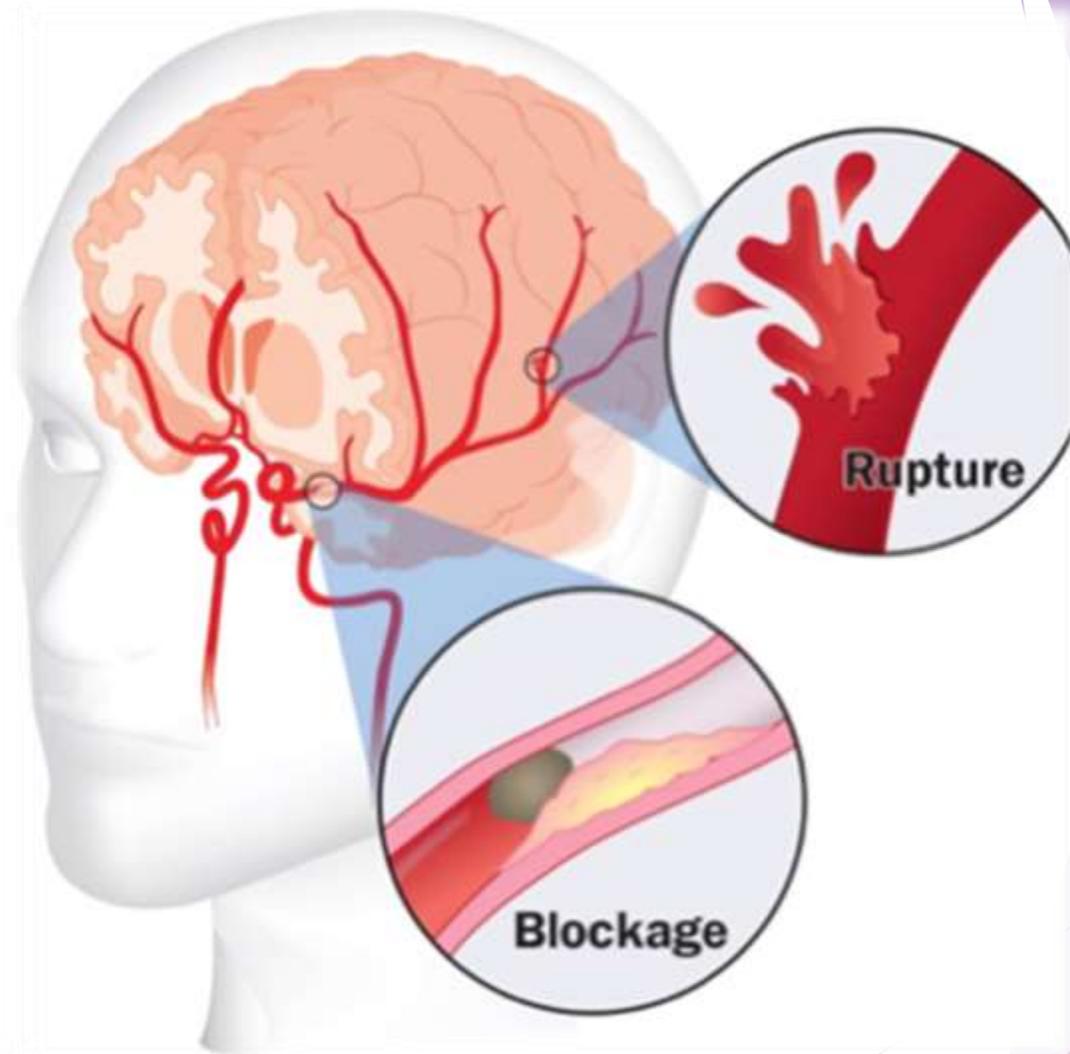
WHAT IS A STROKE?



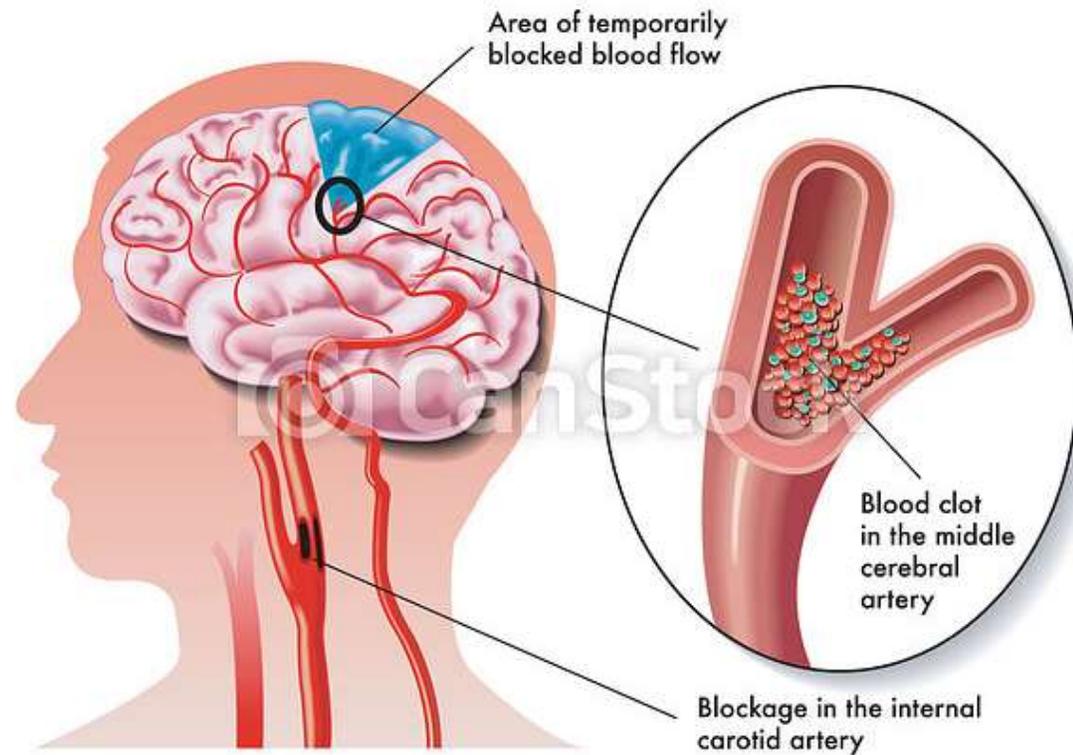
A stroke, or brain attack, occurs when the brain does not receive enough oxygen through the blood that it needs to help the brain function.

TYPES OF STROKE

- ▶ Ischemic stroke: a blood vessel bringing blood to the brain clogs. However it may have other causes, like hypoperfusion (85% of total strokes)
- ▶ Hemorrhagic stroke: a blood vessel in the brain breaks (usually caused by aneurysms or hypertensive small vessels disease)



TRANSIENT ISCHEMIC ATTACKS (TIA)



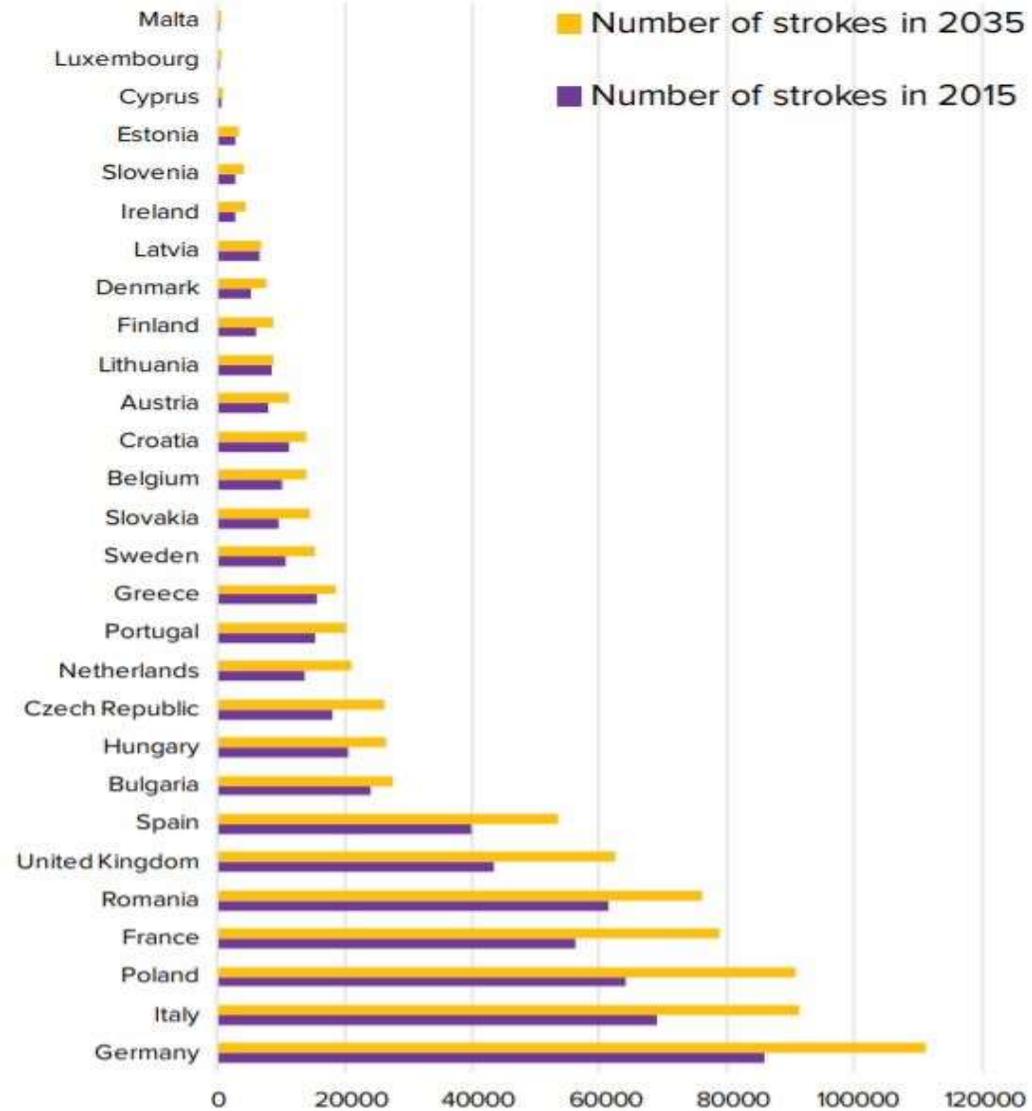
- ▶ It is a focal neurological attack that regresses on its own
- ▶ usually lasts only a few minutes and doesn't cause permanent damage



EPIDEMIOLOGY

- ▶ In 2017, there were 1.12 million incident strokes in the EU
- ▶ 0.46 million deaths
- ▶ 7.06 million disability-adjusted life years lost
- ▶ In 2018, 1 in every 6 deaths from cardiovascular disease was due to stroke.
- ▶ Someone in the United States has a stroke every 40 seconds. Every 4 minutes, someone dies of stroke.
- ▶ Every year, more than 795,000 people in the United States have a stroke. About 610,000 of these are first or new strokes.
- ▶ About 185,000 strokes (nearly 1 of 4) are in people who have had a previous stroke.

Estimated number of strokes in 2015 and 2035



RISK FACTORS

- ▶ High blood pressure.
- ▶ Heart disease.
- ▶ Diabetes.
- ▶ Smoking. Smoking almost doubles your risk for an ischemic stroke.
- ▶ High blood cholesterol and lipids. Lack of exercise
- ▶ Obesity
- ▶ Excessive alcohol use.
- ▶ Illegal drugs.
- ▶ Abnormal heart rhythm.
- ▶ Cardiac structural abnormalities.

RISK FACTORS

- ▶ **Older age.** For each decade of life after age 55, your chance of having a stroke more than doubles.
- ▶ **Race.** African Americans have a much higher risk for death and disability from a stroke than whites. This is partly because the African-American population has a greater incidence of high blood pressure.
- ▶ **Gender.** Stroke occurs more often in men, but more women than men die from stroke.
- ▶ **History of prior stroke.** You are at higher risk for having a second stroke after you have already had a stroke.
- ▶ **History of TIAs**
- ▶ **Heredity or genetics.** The chance of stroke is greater in people with a family history of stroke.
- ▶ **Temperature, season, and climate.** Stroke deaths occur more often during extreme temperatures.

STROKE AWARENESS



80%

OF STROKES ARE PREVENTABLE

STROKE RISK FACTORS



HIGH BLOOD
PRESSURE



UNHEALTHY



SMOKING



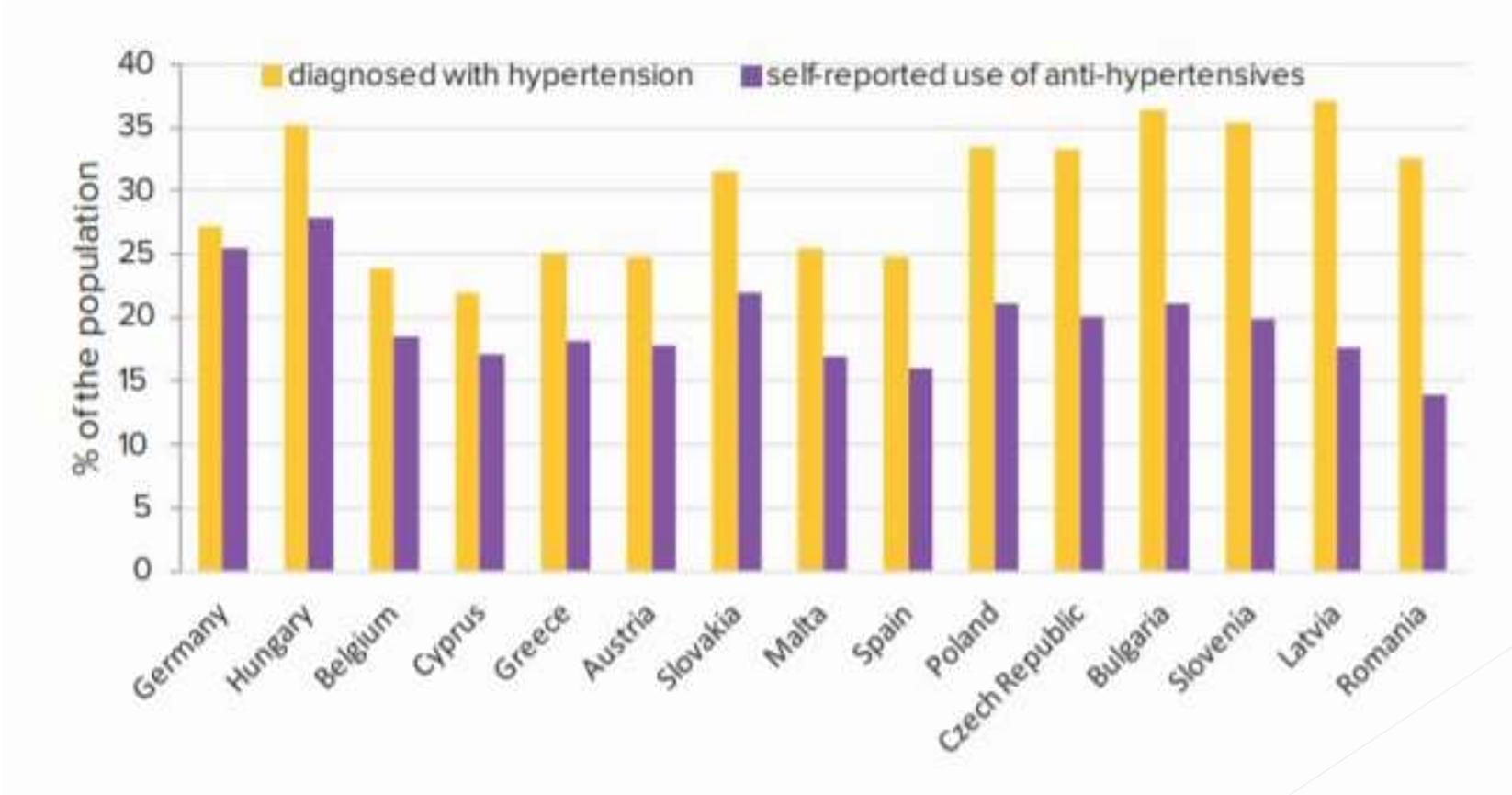
INACTIVE



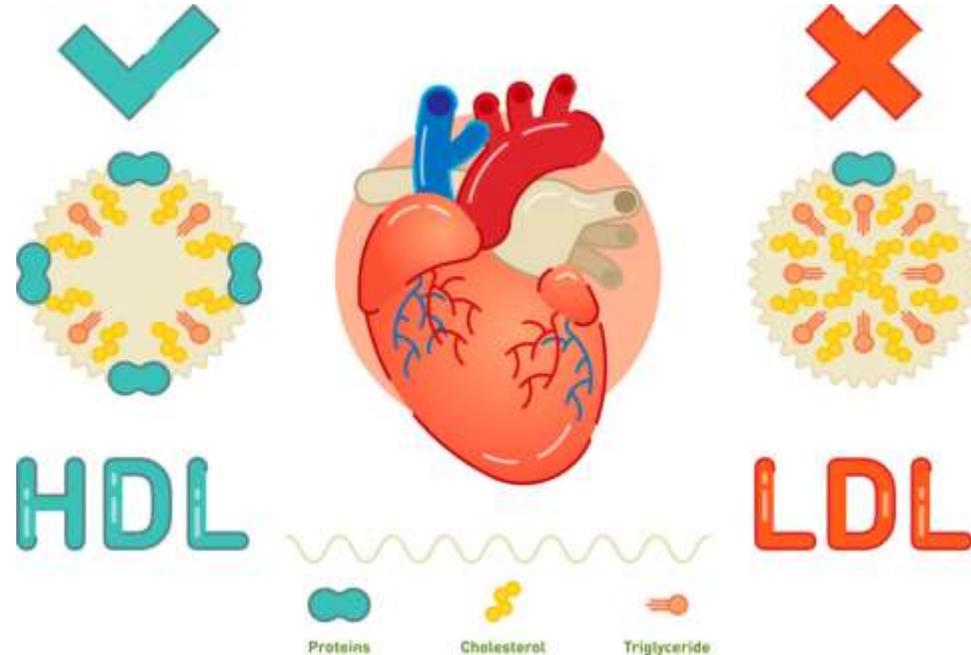
BLOOD PRESSURE MONITORING

HOW OFTEN?

Each regular healthcare visit or at least once per year if blood pressure is less than 120/80 mm Hg



FASTING LIPOPROTEIN PROFILE



HOW OFTEN?

Every 4-6 years for normal-risk adults; more often if any you have elevated risk for heart disease and stroke.



BODY WEIGHT (BMI)

HOW OFTEN?

During your regular healthcare visit.
Once every month.

BLOOD GLUCOSE TEST

HOW OFTEN?

If you have no risk factors for diabetes at least every 3 years





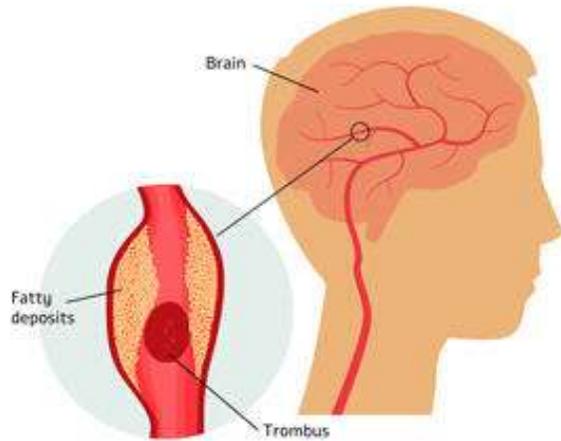
SMOKING, PHYSICAL ACTIVITY, DIET.

HOW OFTEN?

At least each regular
healthcare visit



WHAT ARE THE SYMPTOMS?



ISCHEMIC STROKE signs and symptoms

B



Balance:
Loss of Balance

E



Eyes:
Trouble Seeing

F



Face:
Face Drooping

A



Arm:
Arm or Leg Weakness

S



Speech:
Slurred Speech

T



Time:
Time to call 9-11

WHAT ARE THE SYMPTOMS?

However other signs may be present:

For ischaemic stroke:

- Arm or leg numbness
- Confusion
- Headache
- Dizziness

For haemorrhagic stroke:

- Headache (thunderstrike headache)
- Vomiting
- Loss of consciousness

HOW SHOULD WE ACT?

Follow these steps:

1. Call your emergency number



WHY IS IT SO URGENT?

Stroke is an emergency.

It should be diagnosed in a hospital through a CT scan

It should be treated as soon as possible: as time passes by, the chances of recovery become lower and lower

WHY IS IT SO URGENT?

Management:

- Airway support and oxygen supplementation
- Manage elevated BP
- Maintain balanced glucose levels
- Thrombolytics administration (if ischaemic stroke) or support therapy (if haemorrhagic stroke)

STROKE!

Golden Hour



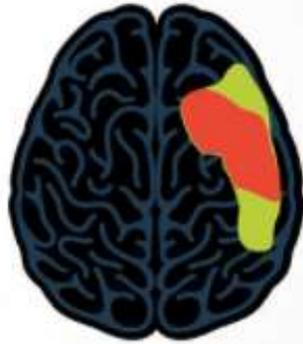
10 minutes

Some brain regions (red) already are irreversibly lost.



1 hour

More time elapses, more brain tissue dies. Urgent treatment could still limit the disability.



3 hours

The window is closing. Treatment at this time may result in moderate disability.



6 hours

Without treatment, all at-risk tissue has died; the unfortunate result may be severe disability.

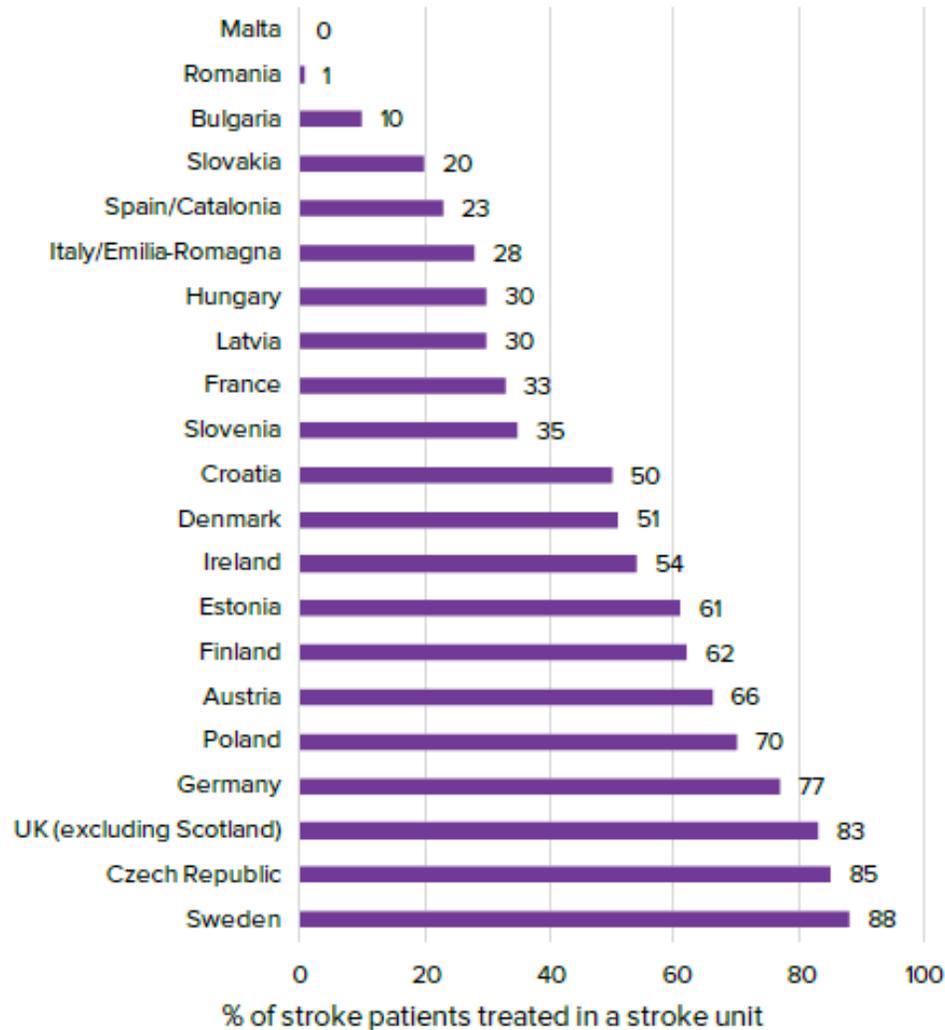
WHY IS IT SO URGENT?

Thrombolytic therapy is useful if administered within 3-4,5 hours.

In 3-4,5 hours it is necessary:

- To find the patient, recognise the symptoms and call the emergency
- To wait for the ambulance to arrive, give him support and bring him to the hospital
- To do the CT scan, labs and exclude contraindications for thrombolysis
- To administer thrombolysis

STROKE UNIT CARE



Stroke units save lives and improve outcomes, but we don't have a Europe-wide applied standard of the essential elements of stroke unit care.

Despite over thirty years of evidence showing the difference stroke units make and despite their inclusion in European and national guidelines, it is estimated that only about 30% of stroke patients receive stroke unit care across Europe.

What may be the long term consequences?

If no recovery is made, there may be persistent neurological dysfunctions:

loss of straght on a limb

speech impairment

sight impairment

face asymmetry

swallowing dysfunctions

urinary/fecal incontinence

However some signs may persist even if acted quick:

- ▶ Post ischemic depression
- ▶ Seizures
- ▶ Higher risk of another stroke

Rehabilitation

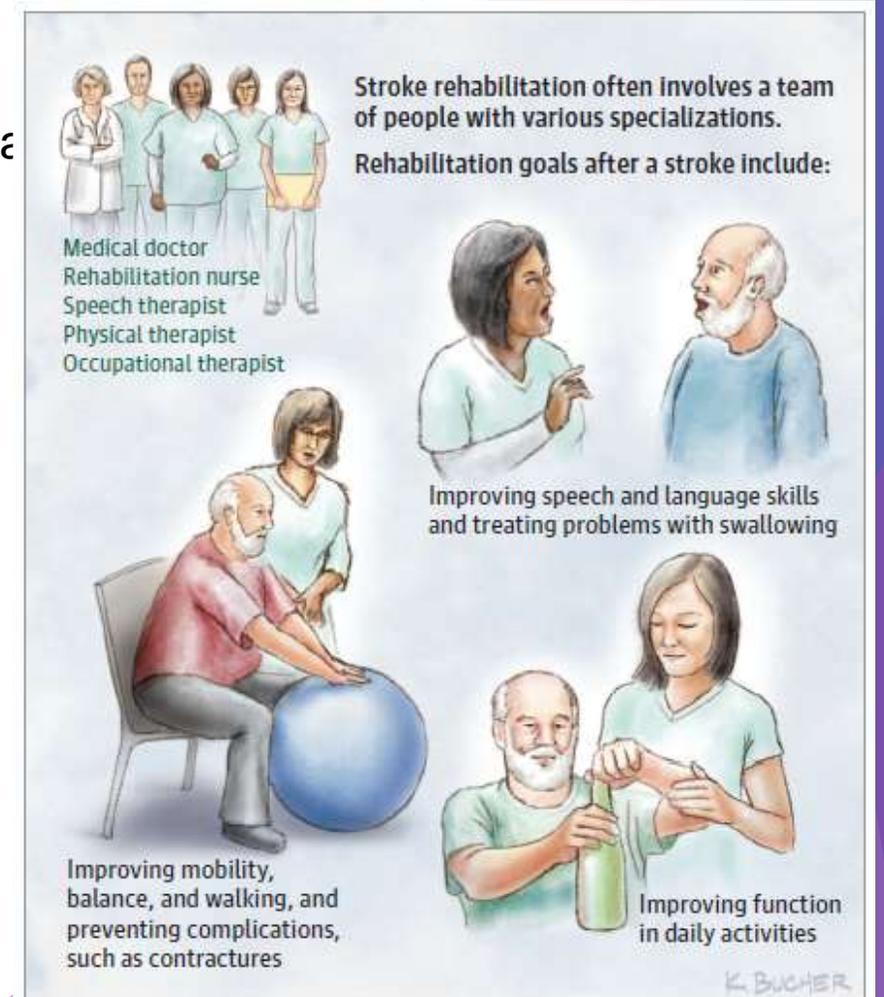
Many stroke patients have problems with mobility, fatigue, speech, memory and/or emotions among others and need support from one or more therapy areas (such as physiotherapy, speech therapy, occupational therapy and/or psychology).

Problems related to stroke can be longlasting. After 15 years, two-thirds (63%) of survivors are living with disability, nearly two in five (39%) have depression and over a quarter (30%) have cognitive impairment.

Furthermore, stroke patients are much more likely than people who have not had a stroke to be living with another illness

Rehabilitation

- Early, coordinated multidisciplinary rehabilitation (on a stroke unit, for acute patients). This includes physiotherapy, occupational therapy, and communication therapy assessment (speech and language).
- Early discharge from stroke unit care if medically appropriate and suitable community rehabilitation is available
- Early assessment of needs after discharge
- Rehabilitation after discharge during the first year after stroke.





Rehabilitation

- ▶ Too many stroke survivors have to wait too long to get an assessment of their rehabilitation needs and to actually receive therapy. The aim should be for multi-disciplinary assessments to take place on the stroke unit, and for rehabilitation to start as soon as someone is medically stable.
- ▶ Access to rehabilitation therapy must be improved. Too many stroke survivors leave hospital without ongoing rehabilitation being in place.
- ▶ Ongoing, long-term support and follow up is inadequate in many parts of Europe. Countries should set targets for secondary prevention, screening for depression, and for psychological and social support.

Fake News and Myths

Stress can cause stroke!

Stress is not a risk factor *per se*, however it may rise blood pressure

Strokes only happen to the elderly!

elderly patients are more prone to strokes, but about 25 percent of strokes happen to people younger than 65

Strokes are painful!

Actually pain is not a common symptom of stroke

You can treat a stroke by taking aspirin!

At best, taking aspirin will do nothing to cure an ischemic stroke. At worst, it will make things worse during a hemorrhagic stroke.

Fake News and Myths

Small strokes don't need to be treated!

Small strokes, if located in the right spots, can cause major deficits in your brain's abilities and after any stroke, you're at higher risk for a repeat stroke. Big or small, all strokes need to be treated the same.

If the symptoms go away, you don't need to see a doctor!

If the symptoms go away, it may be a small stroke, which exposes you to a greater risk of having a bigger one. You are at high risk for a major stroke, so you need to get to the a doctor as soon as possible.”

There is no life after a stroke!

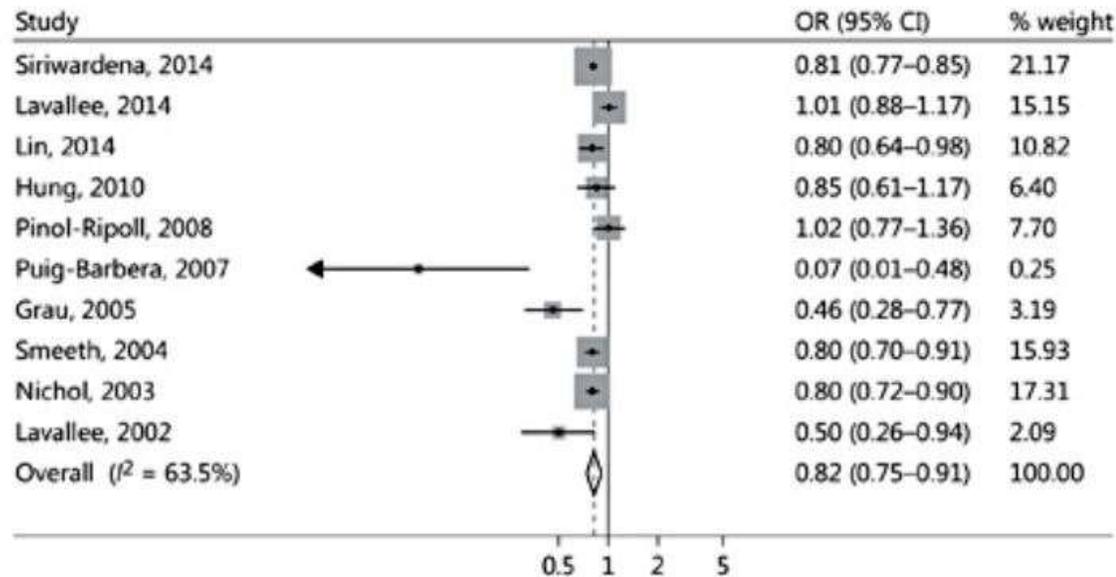
We have more and more ways to treat strokes, and if we intervene in time we can actually save major deficits. With rehabilitation a good percentage of patients will actually be able to function quite well and pursue full lives.

FLU and STROKE

Risk of ischemic stroke after influenza-like illness, stratified by age

	Overall	Age 18–45	Age 45.1–65	Age ≥ 65
0–15 days	2.88 (1.86–4.47)	9.28 (1.72–50.2)	2.71 (1.06–6.93)	2.65 (1.59–4.43)
15–30 days	1.73 (0.99–3.00)	2.00 (0.13–31.9)	1.21 (0.54–2.71)	2.27 (1.29–3.97)
30–60 days	1.68 (1.13–2.51)	1.11 (0.17–7.05)	1.09 (0.29–4.08)	1.83 (1.21–2.76)

Forest plot showing the effect of influenza vaccination on risk of stroke. OR, odds ratio; CI, confidence interval.



ZOSTER and STROKE



1-in-3 people aged ≥ 60 years will get herpes zoster (shingles)



Shingles is associated with increased risk of stroke



Vaccine (Zostavax and Shingrix) prevents Shingles



Receipt of Zostavax was associated with

16% ↓ all stroke

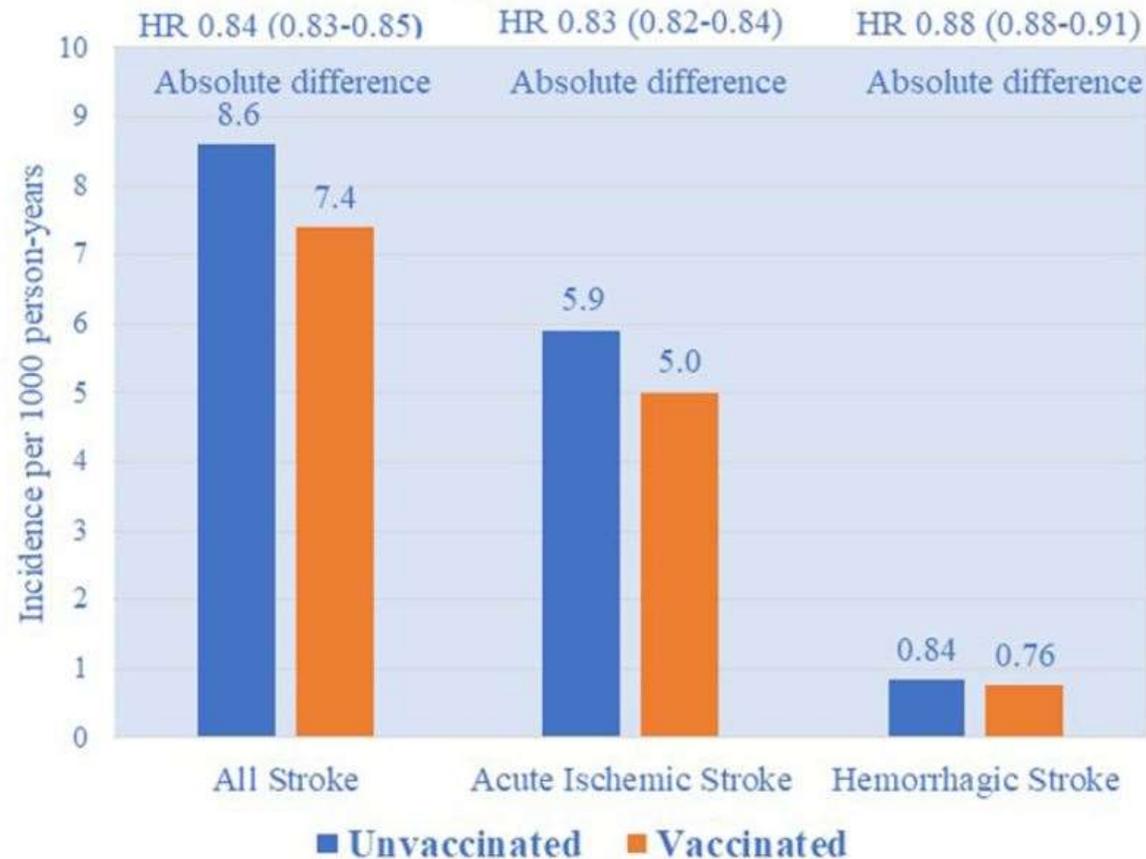
17% ↓ acute ischemic stroke

12% ↓ hemorrhagic stroke



Vaccination against shingles to reduce shingles and shingles-associated stroke risk

Incidence Rates and Adjusted Hazard Ratio (95% CI) For Risk of Stroke by Zostavax Status among Medicare Beneficiaries



COVID-19 AND STROKE

1.8% OF HOSPITAL-ADMITTED COVID-19 PATIENTS EXPERIENCE A STROKE

This is higher than historical data for other infectious diseases



0.75% in SARS



0.2% in influenza

Between 35% and 45% of patients with COVID-19 who suffer a stroke will die

COVID VACCINES and STROKE



Rare blood clot concerns over AstraZeneca vaccine

- ▶ A viral vector vaccine
- ▶ Nearly 200 million people vaccinated, according to WHO

ATYPICAL BLOOD CLOTS



- ▶ "very rare" blood clots combined with a low level of platelets (small cell fragments which form clots) were found among people vaccinated, according to the European Medicines Agency (EMA)
- ▶ This link is "plausible but is not confirmed", says WHO

FREQUENCY

In the European Economic Area* :

Cases of atypical thrombosis	222 of 34 million injections
Deaths	18

WHO and EMA say the balance benefit/risk remains in favour of vaccine

COVID-19 Vaccine Janssen: EMA finds possible link to very rare cases of unusual blood clots with low blood platelets

Risk of Blood Clots

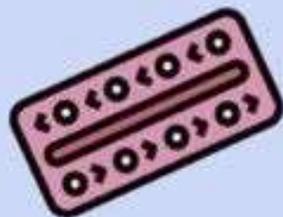
AstraZeneca Vaccine



4 cases in
1,000,000
Vaccines

0.0004%

Birth Control Pill



500 - 1200 cases in
1,000,000
women

0.05% to 0.12%

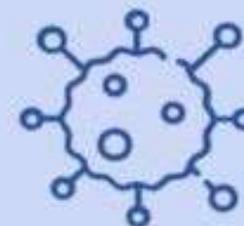
Smoking



1,763 cases in
1,000,000
Smokers

0.18%

COVID Infection



165,000 cases in
1,000,000
Cases

16.5%

Pfizer
vacc
No s
1 mi

Thank you

