

bio-medi English

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🔊 [00: 01]

Is there a little bit more reading? We go through quick.

Stroke. Um. What is stroke?

Anybody can tell me? what is stroke, what happens?

When you have a stroke, what's happening?

What does the stroke mean?

Bonus point, what?

Fall down? Yeah, you will.

But why do you fall down?

What happens?

You get dizzy, good. You're right.

What makes you dizzy?

Where's the problem happening in your body?

Good. It's happening near your brain or in your brain.

Okay. What is happening? What makes the stroke?

You get dizzy and you fall down, yes.

Also if I grab her neck and I pinch her neck here.

I hold it with my hands like this.

I do that maybe for one minute, she begins to get dizzy.

And she's going to fall down.

Why? What am I doing?

I'm stopping the blood. What is in the blood?

It goes to the brain.

Good. So a stroke just means lack of oxygen going to your brain.

Your brain doesn't get enough oxygen, you're going to, you are going to be faint.

You are going to be dizzy, fall down and passed out.

So stroke can be very dangerous because what happens something is blocking the oxygen to your brain.

And if it doesn't get unblocked, if the person remove the blocking, the person will be unconscious and you are going to have serious problem.

You can die from a stroke.

Also even if you survive the stroke, there can be many problems that you suffer from after.

Okay. We're going to find out today.

Stroke is very very common disease.

Right? if you don't watch your health, and you don't do such things, you are high risked from getting a stroke.

Alright, in the overview, also known as cerebral vascular.

Ah cerebral, that word you should know.

🔊 [03:11]

That means brain, right? Cerebral.

We talked about that.

Cerebral is brain.

Vascular means heart. It means heart.

So a stroke has to do with a heart and your brain.

We talked about because your heart pumps blood and your brain needs the blood.

So stroke, we are going to be talking about both heart and brain.

In it, it says here.

It's when your brain is deprived of oxygen; strokes are of course very dangerous, accounting for more than 270,000 deaths.

That was in 2003, in the USA.

Very high stroke in Korea too.

We are going to talk about why.

Because in Korea people are doing something that are very high risk for stroke especially 아저씨s.

Smoking cigarettes is one. Okay.

Stroke is the third leading cause of death in the US. Third leading cause. Wow.

... and heart disease and cancer.

So stroke is very high.

Uh it is a leading cause in disability and institutionalization.

What does that mean?

Disability is having some problems.

If you survive a stroke, you are going to have some problems.

Maybe walking, talking, seeing, hearing.

Different problems you will have if you survive.

So it's a leading cause of disability, and leading cause of institutionalization.

That means having to stay under the care of someone, maybe the hospital, or at a special home or something.

You might that or in a wheelchair.

Every year, 700,000 people suffer stroke.

That's in United States.

Ah, 500,000 for the first time, 200,000 for the recurrent.

Alright. Next paragraph.

Two kinds of stroke, okay, this is an important information.

Two kinds of stroke, one kind of stroke is Ischemic. 따라하세요.

Ischemic stroke. Okay. What is happening, Ischemic?

It says, blood supply to the brain is interrupted by a blood clot.

Usually by a blood clot.

What is a clot?

Clot is a hard piece of blood, okay?

If you cut your arm and it starts bleeding and eventually the bleeding will stop.

If it doesn't stop you die, because all your blood will come out.

But when you get cut, your blood will stop.

How does it stop?

🔊 **[06: 03]**

It stops because inside your blood, it called platelets, okay?

Platelets are very sticky, they are yellow.

They are inside your blood.

And what happens in this when you get cut is platelets will come and they all stick together.

And it makes your blood hard and that's all the clots.

So platelets make your blood clot, okay?

More platelets in your blood, the easier your blood clots and the thicker that your blood is.

So platelets make your blood thick and clot.

Ischemic stroke is when you have a clot that travels up into your brain and it get

Stuck and blocks oxygen to your brain.

And so then you have a stroke.

That is called Ischemic stroke.

Ischemic is with a clot or something blocking the blood.

Alright, it says these clots maybe caused by hardening of the arteries.

In the corroded arteries, where are the corroded arteries?

They are here, these are called your corroded arteries.

These arteries give blood to your brain, right?

That's why I told you, you squeeze someone's neck here, for example my son.

My son is 5 years old.

He is always jumping on me.

This is true. Last weekend, he was on the bed and I walked by, he jumps on my back.

Okay? And he's holding onto my neck, like this.

"Daddy, give me a ride, give me a ride."

And I, "get out kid, you're choking."

He had, he had blocked both my corroded arteries.

And so I'm walking and tried to get him off.

And all of a sudden I noticed I got very dizzy and I'm almost falling down.

I grabbed his hands off.

He had cut my corroded arteries.

I could breathe, but I couldn't, there was no blood going to my brain.

So I had to, you can't jump on daddy and hold his neck.

You would kill daddy, right?

So your corroded arteries, right here and right here bring the blood to your brain.

So these arteries, if you cut them or if you block them, serious problem can happen.

With stroke, some people get some hardening of the arteries.

Something getting stuck in here called plack.

We talked about it last week.

Beta amerloid plack for now alzhimer patient?

Also their stuff can get stuck in here, arteries called plack.

🔊 **[08:56]**

It's a little different kind of plack.

But same, sticky and can make it thick okay?

Can block your clotted arteries.

Okay, um the other kind of stroke is called, 따라하세요, Hemorrhagic stroke.

Okay, so hemerage, what does that mean?

Hemerage, anybody know?

Meaning hemerage?

If you like to watch a hospital shows, you are in the emergency room.

And the doctor working in this says oh, hemeraging! Oh my god, he is hemeraging quickly.

What does hemeraging ?

Bleeding.

Hemeraging, if you are hemeraging, it is bleeding, bleeding out.

Okay? Coming out of the vein or coming out of the blood vessel.

So, Hemorrhagic stroke, this kind of stroke is when the blood vessel breaks in your brain.

Something, you are doing something, it can be anything, but a blood vessel in your brain breaks.

And blood starts to come out. It hemerages.

It comes out, starts bleeding inside your head.

And that is very very serious, can kill you, right?

So you can see in the pictures here.

You have two pictures.

And I have it up here.

Here you can see Ischemic stroke.

What's happening? Well, right here, there is a hard piece of blood, a clot, okay?

And the clot coming through the blood and it gets stuck here in the brain.

So it gets stuck, it stops oxygen for going into this area.

So this area of the brain, no blood, no oxygen, it's going to start get damaged.

You will have a lot of problems here.

Here you can see Hemorrhagic stroke.

What happens, the blood is going to the brain, no problem.

There is no clot, okay? No clots.

But what happens this poew! The blood vessel bursts. Breaks open.

And bleeding inside your brain, so this area there is going to be damaged.

If the bleeding does not stop, the person will die because it is too much damaged.

With Hemorrhagic stroke, if the bleeding stops, then they can go in and they can try to they can,,,

Called clipping we are going to talk about this, they clip this and then they sew it back together, so that it cannot bleed anymore.

And actually I am going to tell you today my wife at this kind of a stroke.

🔊 **[11: 51]**

Actually two months after we got married she got Hemorrhagic stroke.

I will tell you about that.

Okay, you can see here.

Ischemic stroke, 80% of all strokes is Ischemic.

You can see the majority, most of strokes are Ischemic strokes.

Hemorrhagic stroke, not as common.

Next paragraph here, if someone has a stroke, after stroke begins.

We will talk about today what warning signs, how do you know someone is going to have a stroke.

We will talk about that.

If you think someone is having a stroke, they need to quickly get to the hospital.

Because if there is a clot blocking the blood of course they have to reestablish the blood flow.

They have to get rid of the clot.

And make sure you get blood to your brain or you are going to die quickly.

So very important to get quick attention at the hospital.

So you want to get the people breathing, you want to keep them awake.

If they are awake that means you are getting some oxygen to their brain.

Um, okay, and then the last paragraph here it says people who survive a stroke, if you survive a stroke you need to have stroke rehabilitation.

And rehabilitation means treatment to get you better.

Okay, called rehab.

Um, because people who have strokes they lose a lot of their functioning.

Coordination, strength, and different things depending where the damage in the brain, it can affect different.

Different behaviors, different things that you do.

Right? We talked about different areas of the brain, control different things.

So depending on the area of the brain you might have problems with hearing or vision or memory depending where the stroke, where you having a stroke.

Okay. Learning objectives.

What do I want you to learn today?

I told you, we are going to talk about the signs and symptoms.

So I want you to understand signs and symptoms associated with strokes.

Um, I want you to identify, differentiate between the different types.

Hemorrhagic, Ischemic we talked about.

And the treatment options

What are the treatment options for these strokes?

What can you do to help yourself?

Um, I want you to be able to explain how a stroke is diagnosed.

What this diagnosed mean?

How do they diagnose stroke?

Diagnose means finding out what is the problem.

So you get sick, you go to the doctor, and you say 'Doctor, what are my diagnoses?'

What is wrong with me, what is my problem?

🔊 [14:57]

Okay?

So diagnoses, what is my problem?

So how do they diagnose the stroke?

They know you are having a stroke.

Today, we will talk about the steps.

And the last thing, again just like next week, we are going to talk about the risk factors.

So what increases your risk of getting a stroke?

There is a typo.

It says risk factor is associated with Alzheimer disease.

Oops.

Alzheimer disease, no stroke.

So you can cross off Alzheimer disease, writing stroke.

So we talked about, last week we talked about risk factors of Alzheimer.
Today, risk factors of stroke.

Okay.

Your turn for work reading.

The first part here, we are going to talking about treatment options.

So you have a risk for stroke or you had a stroke and you survived.

What are your treatment options?

Ah, someone who has the stroke has a very very high risk of having another one.

Okay?

So if you had a stroke before, and you survived it, your risk of having another one is very high.

So the doctors are going to tell you if you had a stroke, the doctors are going to give you a lot of information of what you must do.

So you don't have another one.

So what do you saying?

Couple of these things could be eating heart healthy foods.

In Korea, there are many heart healthy foods.

Ah, Kimchi is one.

Green tea, um vegetables and fruits.

We are going to talk about that today.

Very important in Korea you have many of these great vegetables, mountain herbs, things like that, that you can eat.

Um, but also taking aspirin, you guys all know aspirin, or other anti-platelet agents.

I told you what a platelet right?

You remember the sticky things in your blood.

Anti-platelet.

Anti means against.

When you take aspirin, taking aspirin makes your blood thinner.

Which means it removes platelets from your blood. Okay?

Taking aspirin makes your blood thinner or more easily to bleed.

So if you take a lot of aspirin in you get caught, your blood is going to bleed for a longer time without clotting.

Because you don't have as many platelets in your blood.

So aspirin is called anti-platelets. Right?

So this is good for Ischemic stroke. If you have a risk of Ischemic stroke which is clotting, making clots, then taking aspirin making your blood thinner will be good.

Right?

🔊 [18: 06]

Because you don't want your blood to be so thick and sticky.

Okay.

So taking aspirin can be a good thing.

Um, now if some people, we talked about the corroded arteries, some people in their corroded arteries, they have plack.

Okay? They have some problem.

And then it get plack in here.

Maybe they eat bad foods or they smoke cigarettes which can cause this kind of plack in your arteries.

Um, if people have a lot of plack in their corroded arteries, and it is very serious.

The blocking is very serious.

The doctors will, maybe they will suggest the person to get surgery.

And the two surgeries we are going to talk about corroded endarterectomy, or cerebral angioplasty.

Which in here we were reading angioplasty means corroded arteries stent.

Putting in a stent.

Alright.

So what does this mean?

What are we talking about?

These two treatments.

The corroded arteries stent.

Here is reading.

Corroded arteries stents are tiny mashed tubes that work by crushing plaque against the wall of the arteries and holding it in place.

This prevents pieces from breaking off and traveling downstream.

Let me show you in the picture, okay.


Corroded arterie, here.

You have a problem so what they will do?

They take at the hospital, they are going to take a catheter.

Okay. And catheters, where is the spelling?

Okay. They take catheters

 **[20:00]**

And all the fact of carbon cycles, cycles of carb.

So then, we will going to start to see more and more problems.

And once the problems are happening, it's going to get quicker and quicker.

We will going to help our problems.


So, we have to be careful.

Ok, through our lesson today, I want to be understand carbon cycles better.

I'm sure you are know about it already some, the green house effect and how we can control this problems happening.

Today you should be able to talk about carbon compound, you should be able to know the differences between fast track carbon cycles and slow track carbon cycles.

You should be able to explain about photo synthesis and the effect of food chains.

 **[21:00]**

You should be able to describe the impact of global warming.

I've just told about it.

And then, what can we do to help balance the carbon cycles.

I told you balance of carbon, canrbon cicles balance is getting a little off-balance. what can we do to make that balcance? back equal.

Ok, alright.

Now, we are go to reading.

In the lecture on what you see, there are little Rs with circles. That means readers.

Every we get to Rs, we will change it. Ok?

So we will start today, over here with you.

You are going to start reading.

You are reading, yes.

(Student speaking)

Ok, so what they are saying here is very important for us to have an understanding about what's happening to our world, what are we doing, how man are creating this problems.

So very important to know why.

Ok, next reader.

(Student speaking)

Ok, alright, chemical reactions.

So, today, we are going to be talking about photo synthesis.

You know photo synthesis and how it's so important to all life in the planet.

Chemical reactions are happening, plants and trees taking carbon dioxide, breaking it

Down with sunlight and releasing oxygen back into the atmosphere.

🔊 [24:05]

And then, humans, living organism, breathing in the oxygen and our body being able to break back down and send back out carbon dioxide into water.

Ok? it's chemical reactions what keeps life moving, keeps life going.

Also today we are talking about things in die, living organism in die or decomposed broken down by bacteria or by fungi.

Ok? or Lg and these things get chemical reactions happen that process to release CO_2

Back into the environment.

Ok? in this process, it's just revolving cycles.

Ok, next.

(student speaking)

Ok, good. can you see producers? we are talking about producers.

Producers are producing oxygen ok? plants or tree like I told you.

The plans and lg, some bacteria remove carbon dioxide which is organic compound and make glucose.

Glucose is needed energy, energy for plants, trees or living organism.

Ok, glucose is the simplest organic compound.

Alright, next reader.

(student speaking)

🔊 [27:18]

Very good.

So they are showing us, giving us some examples what happening.

Glucose can be changed to cellulose stored in, used to build plant tissues or glucose can be stored as starch as stored in energy plant or other living organisms like that.

Other molecules, they can be burned in microgen and make amino acids and protein that you can see how that essential to all of lives.

Ok? life on the planet start with protein.

Ok? alright. going into more photo synthesis, next reader.(student speaking)

Ok, very good.

So, chlorophyll inside plants and chloroplasts inside plants .

This use the structure, used the inside the plants for the process of photo synthesis.

Ok? next reader.

(student speaking)

🔊 [30:05]

Ok, good.

So we have chlorophyll in the leaves taking in this energy.

Ok? chlorophyll absorbs the energy from the sun.

Ok? and then, store in cellular structure called _____.

It burns with hydrogen then can release oxygen in the atmosphere.

She is talking about stomata.

Ok. What is stomata? What are stomata?

The human have stomata.

Do we have stomata?

No, what has stomata?

Where do you find stomata?

On the leaves.

Ok. Stomata is small openings on the leaves and plants and trees.

That takes in carbon dioxide.

Ok? through this openings.

And that's where oxygen comes out.

SO, stomata is used for gas exchange.

Now, picture you can see.

Come in carbon dioxide, going out oxygen.

Energy comes in chlorophyll, stored by, it's absorbed by chlorophyll in the plants.

Ok? In the plants, also need water, so we have water coming in the root.

Ok? and then oxygen goes out through stomata after the chemical reactions take place.

Ok. pretty basic. go to questions.

Let's quickly do it what we talking about.

First, number one, where is carbon found?

Ok let's see, Bungsue.

Where are we can found carbon?

(student speaking)

Everywhere, very good. carbon is in everything.

So we found out today all this product that carbon is inside all this, so we can found carbon basically everywhere.

Ok, next question.

For what purpose do plants use carbon dioxide? Jungmin.

Why do plants use carbon dioxide?

(student speaking)

Very good.

Carbon dioxide for photo synthesis to do that chemical reactions.

Change carbon dioxide to the glucose and oxygen.

Alright, next one.

🔊 **[32:58]**

What percent of all living organisms dry weight is made up of carbon?

Kim jung, who's Kim jung?

What percent of your weight is carbon?

We talked about this one.

Anybody helping her?

What percent? 50percent.

Half, half of every living organism dry weight is carbon, I told you half of your weight is carbon.

Ok, number 4. everyone answer together.

Living things are carbon consumers and producers.

Rright, Only talk about consumers.

Consumers would be human, other mammals and other animals. ok.

Producers, plants and trees, bushes. ok

Next, how's the carbon dioxide released into the atmosphere?

Now, talking about the fast track, carbon cycle.

How is carbon dioxide released into the atmosphere?

Um, Takwon. you.

Takwon, how is the carbon dioxide released?

(student speaking)

Breathing, good, called respiration.

Respiration, we breath in oxygen, we breath out co2.

So, that's how it released. ok.

Also, through respiration, what is other way? I told you.

(student speaking)

Parcel pure, that's a slow track.

In the fast track, we have consumers, producers and one more part, decomposers.

And I told you, bacteria can, when something dies, it decomposed and that chemical reactions also releases co2.

Right, so, through respiration and decompositions.

Ok, very good.

Back to the reading.

Next reader, plants.

Where are we? you? okay.

🔊[34:58]

(student speaking)

Ok, very good.

Respiration.

We know respiration at basically breathing and

🔊[37:02]

She is telling us that this is a global cycle.

Carbon cycle is global.

What did that mean?

Well, we breath in carbon dioxide, goes into the atmosphere.

It can travel long, long way. right?

Before absorbed by producers, and absorbed by oceans.

Ok? that's why global warming cycle happening not just one little place, but happens everywhere.

Here we can see what we are talking about.

Here we have some consumers.

Ok, here we have producers.

Also we have decomposers in this category. bacteria, fungi.

Ok, very good next.

In the back, yeah.

(student speaking)

Ok, so basically we depend on this producers.

There are the only things that can break down into carbon compound for us to survive. right?

We are talking right now about fast track of carbon cycling.

Ok. next reader.

(student speaking)

🔊 **[40:00]**

I must watch what I eat and then maybe I will be ok.

Alright next one. Ok. Cholesterol. If you read about help. You read about cholesterol.

And many times cholesterol is bad for you.

But HDL cholesterol is good.

And if you don't have enough HDL cholesterol it can be increasing your risk of getting a stroke.

You can do another one.

Obesity.

What does that mean? You are going to hear, I think you are going to hear more and

more about this word in Korea and actually in America this is a serious problem.

Obesity means people who are fat but more than fat over fat, ok?

So in Korea not so much of a problem with obesity not so much especially in the past but in Korea obesity is getting more and more of a problem.

Why? Because Korea is getting more, more lazy.

Korea is actually getting more developed and you have the '빨리빨리' culture, everything has to be fast and so Koreans are starting to be more like America.

Fast food and eating bad things, quickly eating ok?

And so when you do that you are eating snacks, you are eating cookies, you are eating fast food hamburgers, pizza, fried chicken.

You are going to get like this.


Ok so obesity in America anybody have an idea how many, what % of Americans are obese?

What do you think? 50? What do you think? 30? And how about you? 40-50? And 30?

No one wins. 60. In America 60%. I think the last time I was reading 60% of Americans are obese. Can you imagine? That is 6 out of 10 people.

And in certain areas of America its worse.

Because some areas are not bad actually being honest with you where I live in America is the lowest amount of obesity so I'm actually little bit happy about my area of America.

 **[43:00]**

But in some areas of Texas, Texas is the worst maybe like 80 or 90 percent obese.

So huge problems with obesity and because of this in America you have a lot of stroke happening especially in these high obese areas.

Korea I was checking about 15% or 13-15% obese and I think that number has gone higher in the last few years.

So you have to try to keep it down.

America is embarrassing. 60%.

Ok. Next one. Lack of exercise. Lack means not enough. So lack of exercise.

I know that people in Korea they eat well, most people eat pretty well, they have very thin body, not obese, but exercise (no).

They look thin but no muscle. Right? It is important to exercise. All of you university students you come to my class and what do you see? Some of you are falling asleep!

Why? Because you stay up too late and maybe you don't exercise enough! Ok?

Exercise gets your heart pumping, get you more oxygen into your brain.

More oxygen into your brain is going to make you more awake. More alert.

But of course some of you are eating lunch before you come here and then that can make you a little bit sleepy. Like you today. Ok. I'm just picking on her.

So lack of exercise increases stroke risk. One more.

Excessive use of alcohol. We talked in our drug lecture, we talked about alcohol.

Alcohol can be good for our heart, if you drink one drink a day.

That can be good but going out and drinking 3 bottles of soju on Friday, that can be dangerous.

And too much alcohol can increase your risk of getting a stroke.

Of course too much alcohol can cause many, many other problems you can see behind me.

Breathing may stop, bleeding throat, increase brain damage and stroke many problems.

But one or two a day. No problem. Good for you.

🔊 [46:00]

Next, sir. Bad. Drug abuse. What drugs do you see there, example? Cocaine.

Anybody remember? Cocaine stimulant or depressing?

Stimulant. Cocaine is stimulant. You take cocaine your heart is going to increase beating so your heart rate is not regular.

So that can increase your chance of getting stroke.

So using cocaine and using other drugs that change your heart rhythm can increase your chance of getting a stroke.

One more. Ok, last week alignment disease. The same we talked about head injury

right?

With stroke also you get a head injury it increases your chances of getting a stroke.

Ok, next. Women. So this is for women during pregnancy.

So during pregnancy your body is changing.

You are under a lot of stress this can increase your chance of getting a stroke.

During child birth, child birth you have to push if you are having natural child birth, it is very stressful for the woman's body she is pushing, during this time you can have hemorrhage stroke. Break the blood vessel in your head.

So there are high risk during child birth, pregnancy and menopause.

Menopause later in woman's life. 40 or 50 years old.

Ok, next. Prior stroke. Prior mans you have one before.


So you had a stroke before or if you had a heart attack before, your chances of getting a stroke is increased.

So next one other possible risks.

First one is sleep apnea. What is this? Sleep apnea.

When you are sleeping. Some people when they are sleeping their tong falls back into their throat.

People who sleep on their back and their tong will go back in their throat.

 **[49:00]**

And it closes the air way. Narrowed air way.

People who sleep like this will usually snore very loudly.

If you have a friend who is doing that it's little dangerous because what it means is their air way is getting blocked.

If someone has sleep apnea this can increase your risk of getting a stroke.

Another one, atrial flutter. They say this is unusually fast heart rhythm.

Kind like we talked about taking drugs.

Cocaine increases your heart rate. What is saying here atrial flutter is your heart flutters, beating very quickly.

And this can cause clots to happen.

And the last one, depression.

This is not clear, not clearly understood why this is true but people who have depression, people who are depressed have a higher risk of having a stroke.

Ok signs and symptoms of a stroke.

So how can you tell, how can we tell if someone is going to have a stroke, what are the some of the symptoms, what are some of the signs of a stroke.

Symptoms can vary according to which type of stroke is present.

We talked about which type, hemorrhagic or ischemic.

For example symptoms of embolic stroke tend to hit suddenly whereas symptoms of a thrombotic stroke develop more gradually.

Symptoms of these both types of ischemic stroke may include.

Alright guys i didn't tell you about this yet.

So ischemic stroke, that is when you get a blood clot, a blood clot travels up and gets stuck in your brain the clot sticks in your brain you get a stroke.

There are two kinds of ischemic stroke.

So there are ischemic and hemorrhagic stroke but there are two kinds of ischemic stroke.

One is called an embolic stroke the other one is called a thrombotic stroke.

Now what is the difference?

Embolic stroke is when the clot is starting here, it starts very near your head.

And when you have embolic stroke (00:52:00) the symptoms are very sudden.

So if the clot is starting here, it's already close to your head your symptoms are going to be very sudden, they come on very quickly.

If its thrombotic stroke, and what this means thrombotic stroke means that the blood clot travelling from some other area in your body.

Maybe from your leg, maybe from your heart.

So the blood clot is travelling from some other area travelling through your body.

And finally it goes up into your head.

So thrombotic stroke would be more gradual, more slowly.

Your symptoms for thrombotic stroke won't be so sudden.

Anyway, here are some of the symptoms.

Symptoms for both of these types so both of these types of stroke embolic and thrombotic include blindness in one eye which means you can't see out of one eye or hearing problems in one ear.

Why do you think only one eye?

Why does it say one eye or one ear have problem?

Anybody know? Why do you have problem with only one side of your body?

Very good. A+

Because we talked about your brain has two hemispheres right?

Right side and left side.

Right hemisphere and left hemisphere of your brain.

If the stroke is on the right side of your brain where is your problem going to be?

Left side of your body.

So if my stroke is here, if I'm having problems here, the stroke is here maybe I can't see with this eye or I can't hear out of this ear.

If the stroke is on this side, the opposite.

That's why you see only one side of your body has the problem because the stroke is going to either here or here.

Blindness or hearing problems confusion so you are confused you don't know what is happening.

Dizzy like she was saying in the beginning today, people get dizzy they have lack of coordination.

Nausea or vomiting. Numbness means you can't feel your body.

So if your arm is numb you can't feel your arm it's numb.

So you can have numbness or (00:55:00) weakness on one side of your body.

Seizures now we talked about seizures we talked about neuroscience I told you epilepsy.

Epilepsy is when someone has a seizure, their body uncontrolled movement.

So with stroke you can also have seizures.

Severe headache similar to a migraine so stroke can give you severe headache.

Another thing trouble speaking or understanding speech.

So you can't speak well and have trouble understanding what someone is saying.

All of these things are signs that someone could be having a stroke or about to have a stroke.

So if you notice many of these things from someone get them to the hospital quickly.

The next is talking about hemorrhagic stroke so these symptoms were for ischemic stroke and we talked about two kinds of ischemic stroke; embolic and thrombotic here are the symptoms for these types for ischemic stroke.

Here are symptoms for hemorrhagic stroke.

The stroke that my wife had. Bless you.

Hemorrhagic stroke bleeding in the brain, what are the symptoms or the signs?

Confusion, nausea, vomiting, severe headache.

My wife remember the story I told you about my wife, she went to the bathroom and started vomiting also my wife woke up severe headache.

We are not just talking about headache, we are talking oh my god I'm going to die headache.

So severe headache and confusion.

My wife had all of these symptoms.

Very important, remember I told you about my wife, my wife she woke up she said she had a severe headache and what did I say?

Oh, do you want me to get you some aspirin?

Is that a smart idea? No, I told you what does aspirin do?

You take aspirin it makes your blood thin which means bleeding is easier.

Now if someone has a hemorrhagic stroke, remember I told you hemorrhage means bleeding, do you want the bleeding to continue?

Absolutely not that's the worse, right?

Maybe the worst thing I can do, oh aspirin?

Very terrible.

🔊 **[58:00]**

So my wife, thanks to my wife she said no this is serious so I didn't give her any aspirin.

So it says here if these kind of stroke is suspected you should not take aspirin.

This could make it worse like continuing the bleeding.

So, this is giving aspirin because if someone says they have a severe headache not a good idea.

Just go to the hospital.

Ok, so these are the sign and symptoms now we are going to talk about diagnosis.

I told you diagnosis means when you go to the hospital you see some signs you see some symptoms.

You bring the person to the hospital and you say oh my father he is having headaches and he is having troubles hearing from his right ear.

I think I wanted to bring him here I wasn't sure what is the problem.

So how can they diagnose? They want to diagnose your father.

Well for stroke the first thing they will do the first test they will do once you get there is a CATs.

CATs scan or CT scan. I'm sure you've heard about.

So what is saying here why would they do a CATs scan? Why is that good?

You can see here, two reasons. Two reasons why they do a CAT scan.

First one they can determine if you are having a severe hemorrhage or ischemic stroke.

So they can tell which type of stroke which is very important, right?

They want to know.

🔊 [01:00:00]

Are you having a ischemic stroke or is it a hemorrhage stroke?

Ok, so once they know that, that is very important.

And the next thing they can learn, is where is it located the stroke, ok?

And you can see, here is the CAT scan, here is the CT scan.

They can see, ah here is where the damage.

This is where the problem is, happening.

So, the CT scan can tell them what kinds of stroke.

And where is it happening, where is it located.

So, that is why they do this test first.

Ok. Then it says once the patient is stabilized, once they have a person in a stable condition, not getting worse.

They are going to do many different tests.

First test that they will do, is a physical test.

Physical examination.

And you see this two all, every doctor you see, all have this.

Around their next, what is this?

This is call they, stethoscope.

Ok, why do they use a stethoscope?

For listening right? To reason.

This is very important, very simple tool.

But, they use this, so they can listen, carotid artery

Are you having a problem, if there is some blockage here, ok?

So, they listen to your carotid artery with their stethoscope.

And if they hear some irregular beating, they know maybe you have some blockage in your carotid artery.

Alright, next thing we will do, is in carotid artery sound.

You can hear.

You know, when women is pregnant, 임신.

They do, they use artery sound to look at the baby.

See if everything is ok.

They can use a smaller virgin, smaller artery sound.

They look at your carotid artery, so they can see inside.

Your carotid artery, oh there is some plex in there, right?

So, carotid artery sound can look at plex.

Another test they might do is a MRA.

Very similar to MRI but, MRA is called egrphy magnetic resident.

And it can show them, how serious the blockage of you're a is

So they can look at you're blood a ,

You can see you're a in your brain.

They can look very closely.

They can see how serious it is

Now another thing they will do, is called in EKG or ECG.

And this, we know with stroke, we are talking about the brain, and we are talking about the heart.

It is a connection between both, because the heart, is what is a pumping the blood.

And the blood clock is inside the blood.

So, they will also look at your heart.

So, in a Electrocardiogram, cardio is heart, electro means electricity.

Electricity on your heart.

So, they put these electro on to your heart.

And they can measure your heart rate.

Is it regular?

Is it irregular?

You have some problem.

Remember we talked about, if we have irregular heart beat, that can be causing stroke.

So, we are going to do a EKG to listen to your heart.

Next thing they will do a blood test.

So, we will going to do a blood count, complete blood count.

CBC, and we are look for, risk factors, things in your blood.

How is your cholesterol, do you have a high cholesterol.

Do you have a lot of fat.

Fatty blood.

How is your good cholesterol.

Do you have too low.

So we will going to do complete blood test, make sure everything in your blood looks ok.

Depending on what they see in your blood.

Your blood test, then we are going to give you some advise.

You need to eat more fruits.

You need to stop eating pizza.

Depending on what your blood count says.

Then they will tell you, you're treatment plan.

Right, other test they might do, to see about your brain, to see how your brain is doing.

So, we talked about the heart.

Now these are looking more at your brain.

EKG and EEG

Cardio heart.

E, encephalo, meaning your brain.

So, electroencephalogram, very similar to the EKG.

But they are putting electro on your head.

And so, by putting the electricity, electro on your head, they can measure the activity that happening in your brain.

What part are your brain is active.

And the last test is called evoke potential study

And it is going to measure your response to things that you see hear or touch, measuring your brain response.

Ok, future treatment options, going back to the beginning.

(student)

Ok, antibiotic the Plack, plack is in you're a

Some people get this, a, remember I told you, my dead has this.

This plack that is inside you're a, can have bacteria, bacteria can be in that plack.

So. What they are doing is they are studying antibiotic, using antibiotic that will make their plack harder.

So, it will not come off, it will not fall off and what happens, people who have this plack, what happens is plack will break off and that will break off, and it will travel up in to the brain and make the clot.

So, by using antibiotics they can kill the bacteria or they can make the plack that changed the consistency of the plack, and make sure it doesn't fall off and travel up to the brain.

Ok, next one, mechanical thromb

So, what is this, mechanical thromb is.

Alright, we talked about k.

Using the K, k is that two they can put in.

So, here we have our k tube.

On the end of this tube, they are developing new tools.

New tools that they can use.

Like a snails, which means, this type of tool, to go in and to kind of pull the plack, remove the plack by putting it off.

Or having like a spinning blade.

And this spins around, they can go tin and they can cut up the plack.

I mean they can cut up the clot, remove the plack.

So, what this is, using different developing different tools,, put on the k, so they can push it in there, and break the clot.

Or take out the clot, ok?

You can see here, some of the other ideas.

Lasers, sound wave, sucktion, sucking it out.

Spinning blades, different things.

Ok? The next one says, neuron protective agent.

Alright, neuron your neuron, and what this is, using treatments that protect your neuron, your nerve cells from ding.

During a stroke, oxygen doesn't go to your brain, and so nerve cells in your brain and neurons are going to die.

You are going to be damaged.

So, what they are doing is, they are coming up with the drugs and treatments that will protect the nerve cells, protect your neurons so they don't get damaged, ok?

Rescue the cells from getting injured.

So, your nerve cells are going to die.

And this is what happens.

First, you get a clot in your head, and the blood cannot go there.

So right away, you are start to getting damage, because the oxygen can get into that area.

And so some nerve cells will have damage.

But the other damage, is when they remove the blood clot

When they take away the blood clot, and then blood goes to the area, that causes damage.

When they reestablish blood to the area, and that causes more damage.

So, there is two times you can have damage.

When it stops, and when it starts again.

So, they are trying to come up with method to protect the brain cells from damage before and after. The blood stops.

Ok, next one stem cell transparent, aha.

So, very similar we talk about Parkinson's disease, remember?

Parkinson's disease with stem cell, DA neuron?

Well this is same when stroke, you have damage to in neuron in your brain.

So, the same way like Parkinson, we can use stem cell to re grow or regenerate new neurons in damaged area of your brain can be very helpful.

So, in the future you might see stem cell therapy working for people who have stroke damage.

This is very interesting, hyperthermia you can see here, hyperthermia.

Hyperthermia, is when the body get so cold, ok?

Hyperthermia is when your body get so cold.

That your brain slows down, functioning of your brain is very slow.

And it can cause serious problem for you.

Actually, if you don't get medical help.

However, hyperthermia, they are using this treatment, making the body very cold,

Because, someone who has a stroke they will going to have a lot of damage in their brain.

But, when you make someone's body very very cold, the brain doesn't need as much oxygen.
Because everything slowing down, right?

So, when you are very very very very cold,, your body need less oxygen.

Because, everything start to shut down.

Your body is keeping just concerned about your heart beating.

So, your heart with a more slow down, your brain kind of star slowing down, your body doesn't need as much oxygen to survive.

So, one treatment method with people with strok is to, after did they have a stroke, immediately get them cold, freeze their bodies.

Which is a little dangerous of course.

But, with it does, make the body less need oxygen.

And it gives them more time to get treatment.

And lowers the damage, that they can have to their brain.

So, very interesting treatment method, using hyperthermia.

We going to go quickly now, I wanna finish.

Um, following a stroke.

So, after someone has a stroke, I told you they going to have a damage to their body.

Alright, what can happen to them.

Well we will going to have changes in their functioning, usually.

Now we know, if the stroke is in the right side of their body, they going to have problem on the left side.

I mean, I'm sorry, if the stoke is in right side of their brain.

We are going to have problems on the left side of our body, and vice versa.

[Changes in functioning.]

People might have confusion or dementia.

We talked about this word, lots of mento functioning.

Difficulty swallowing., difficulty eating.

Drooping on the face or the mouth, on one side.

So, this side, why drooping, because they cannot feel, there is no feeling, so their face, like, kind of hang down one side.

Lack of balance, trouble walking, you might see some old people, they had a stroke , they are walking with a not.. no balance.

Paralysis, once died.

Paralysis meaning, you ca not feel.

No feeling, you cannot move.

You can't move this arm, you can't move this leg.

Only one side, because the damage.

Bladder problems going to the bathroom, difficult.

We talked about this, trouble seeing or hearing.

One side, no sight., in your right side or right ear.

Weakness, depression, or just overall pain, after you have stroke, you have a pain.

Alright, all of these things are symptom after following a stroke.

Last part today, prevention method.

What can you do, to prevent getting a stroke.

What else something you can do, so you don't getting a stroke.

Well. One thing you can do, controlling high blood pressure.

Now, we found out the risk right?

We talked about the risks of stroke already

So, prevention method would be opposite the risk.

So, number one, if you have a high blood pressure, then you have to control the blood pressure.

The treatment, if you have atrial flutter, sleep apnea, sure if you have these problem, you have a treatment for them.

We talked about sleep apnea.

Stress, high stress can cause stroke.

High stress is not good.

So managing your stress.

You guys are university students.

Maybe during a exam time, you get a lot of stress.

If your stress is too much, you get a control it.

Cause it can cause a stroke.

Especially, the hemorrhagic stroke.

Reduce cholesterol levels, ok?

Don't eat bad food.

Increase exercise, maintain a good weight.

You don't want to be obis.

Make sure you get exercise.

If you are smoking, stop, it is horrible.

Limit your alcohol, one every day is good.

Ten every weekend is not.

Control diabetes, eat healthy.

In your notes here, guess you couple of example, women that ate fish, and fish has omega 3.

Omega 3, fatty acids.

Those are very good for you.

So, people who eat a lot of fish, lower risk of stroke

So omega 3, very good.

High levels of vitamin C.

Is very good, so, how do we get vitamin C?

You can take vitamin C pills, not so good actually.

Science, we can't tell vitamin pill, is that good?

But the best way vitamin C, is eating fruits and vegetables.

Getting vitamin C, from natural source, fruits and vegetables.

This is the best way.

Eating vitamin C, lower your risk of stroke.

And eating whole grain foods.

Ok, whole grain food like a wheat, 밀 good for you.

Taking aspirin, if you have a chance of ischemic stroke, or you have a clot.

Taking aspirin is good.

Or antiplatelet agents, right?

Making your blood thinner can be good for your I stroke

My father I told you my father, the doctors told him that he said, "oh, sir you have a a you have a risk for I stroke."

And the doctor told him that a little bit of aspirin is good for you.

But my father, he went over, he was taking aspirin, too much aspirin.

Maybe everyday taking 3 aspirin.

Ok, what happened?

I told you that aspirin makes your blood very thin, right?

So, my father thinking, "oh, I take a lot of my risk will go down.

But, what happened to my father is, he one day he got a nose bleed.

He's nose started to bleed.

And he, no problem.

But it is bleeding one hour.

Bleeding two hour, all day, bleeding.

Finally goes to the hospital.

And he tells about, "oh, my nose are, won't stop"

And the doctor, "what are you, are you doing anything?"

He answer "I take aspirin."

He says" how much?

"Oh, three a three day"

He says, "No, you are taking too much."

You have no platelet.

So your blood had no, very little platelet.

So my father, if he didn't go to the hospital, he could have died from a nose bleed.

So. Taking too much aspirin, not good.

Because, you need your blood to stop.

When you get cut, you have to get your blood to stop.

So, taking like children aspirin, is good.

Taking one children aspirin, everyday good.

Alright, and the last one, hopefully the last thing that you have to do, preventative surgery.

We talked about, antioplastic, is in the carotid argery stants or cerebral, oh I'm sorry carotid endarterectomy, we will cut into you.

This is the last option for preventing stroke.

But, it is still, one of options.

Ok, that's it.