



# Mayo Clinic Podcast - Dr. Robert Brown - YouTube Audio Expor...

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## SUMMARY KEYWORDS

stroke, risk factors, symptoms, called, artery, strokes, mayo clinic, brain cells, brain, bob, people, patient, meaning, prognosis, cat scan, question, blood supply, occur, clot, tia

## SPEAKERS

Dr. Halena Gazelka, Narrator, Dr. Robert Brown

- N** Narrator 00:01  
Coming up on Mayo Clinic Q&A,
- D** Dr. Robert Brown 00:03  
Strokes are very commonly occurring in people of all ages and so it's very important that people know what is the stroke? What are the symptoms? What are the risk factors for stroke? I look forward to discussing all those things today,
- N** Narrator 00:16  
May is stroke Awareness Month and knowing the signs and symptoms could be the key to saving someone's life. Maybe even your own.
- D** Dr. Robert Brown 00:23  
Strokes tend to present with the sudden onset of difficulty doing something: sudden onset of weakness in the face, arm or leg, sudden difficulty speaking or understanding others, blindness in one eye or the other, or both. So, these sudden onset of symptoms, sudden onset of difficulty doing something.

**D** Dr. Halena Gazelka 00:46

Welcome, everyone to Mayo Clinic Q&A. I'm Dr. Halena Gazelka. On average, someone in the United States has a stroke every 40 seconds. A stroke occurs when the blood supply to part of the brain is interrupted, depriving the brain of oxygen. It's important to recognize the warning signs of stroke, because prompt treatment can minimize brain damage that can occur. So, every moment is crucial. Well, May is National Stroke Awareness Month, and here to discuss this with us today is the Division Chair of Stroke and Cerebrovascular Diseases at Mayo Clinic, Dr. Robert Brown. Bob, thank you for being here today.

**D** Dr. Robert Brown 01:26

Delighted to be here. Thanks for inviting me.

**D** Dr. Halena Gazelka 01:28

I think this is an incredibly common topic and occurrence that people should understand better than they do.

**D** Dr. Robert Brown 01:37

Yeah, strokes are very commonly occurring in people of all ages. And so, it's very important that people know, what is a stroke? What are the symptoms? What are the risk factors for stroke? I look forward to discussing all those things today.

**D** Dr. Halena Gazelka 01:50

So, can you just describe for us first Bob, what is it that we mean when we say the word stroke? What is happening?

**D** Dr. Robert Brown 01:58

Well, there are two main types of stroke, both of which affect the brain. The most common type of stroke, about 85% of strokes, is a lack of blood supply to the brain called an ischemic stroke or a cerebral infarction. So, for whatever reason, the artery which carries the oxygen carrying blood up to the brain, that artery becomes blocked, and then there's a lack of blood flow, and the brain cells begin to die off. And then the other type of stroke, about 15% of all strokes, is what's called a hemorrhagic or a bleeding stroke in which there's blood that spills outside of the artery into the brain tissue, or surrounding the brain tissue.

**D** Dr. Halena Gazelka 02:46  
And Bob, the first type that you mentioned, where there's a clot that interrupts blood supply sounds a little bit about what happens to the heart when someone has a heart attack.

**D** Dr. Robert Brown 02:55  
You're exactly right. A heart attack, also called a myocardial infarction, meaning a lack of blood flow and dying off of the heart cells. Similarly, a cerebral infarction is of the same general mechanism, meaning there's a lack of blood supply to the brain cells, and then those brain cells begin to die off.

**D** Dr. Halena Gazelka 03:17  
And then the second type sometimes where there's bleeding, sometimes we hear of people having a brain aneurysm. Is that the same thing?

**D** Dr. Robert Brown 03:24  
It's a great question. And there are two main types of bleeding stroke, there's something called an intracerebral hemorrhage in which there's bleeding into the brain tissue. And then there's another type, that's called a subarachnoid hemorrhage. And that is a type of bleeding, where it's over the lining of the brain. An aneurysm is the most common cause of that type of bleeding around the lining of the brain. So, it's important to mention though, that aneurysms are relatively common in people, about 2% of all adults have a brain aneurysm, but most of them never rupture. But sometimes you'll hear that somebody will say, Oh, so and so had a brain aneurysm. And what they're implying there is that it was one of those brain aneurysms that actually ruptured and caused this blood to spill over the lining of the brain.

**D** Dr. Halena Gazelka 04:20  
Interesting. So, do strokes affect all people the same or similarly?

**D** Dr. Robert Brown 04:25  
That's a great question too. And as I mentioned earlier, strokes can affect people of all ages. Admittedly, strokes are of increasing occurrence as we get older. But it's important to recognize that even young people in their 20s 30s 40s can have a stroke and much less

commonly in children. But a stroke can affect everyone in a little bit different way. And the reason is, any part of the brain can be affected by a stroke and then that is what leads to the specific symptoms based on what part of the brain is lacking in blood flow.

**D** Dr. Halena Gazelka 05:06

So, I think we mentioned earlier that strokes can cause brain cells to actually die from either of those types of strokes. What happens when brain cells die?

**D** Dr. Robert Brown 05:18

Well, as the blood flow is lacking to the brain, that is that artery is blocked for whatever reason, those brain cells then are lacking in oxygen, and can no longer function. And as they are struggling to function, eventually they die because they're just not able to get the oxygen they need. And once they stop receiving that oxygen, then you will begin to see the symptoms quickly evolving that relate to a stroke.

**D** Dr. Halena Gazelka 05:51

If the brain cells die, are they rejuvenated after they grow back?

**D** Dr. Robert Brown 05:57

Well, unfortunately, the brain is one of those parts of the body that once the cells have died off, they cannot reactivate. They cannot come back to life after they've died off. But as we will talk about, there are ways with various therapies, physical therapy, occupational therapy, speech therapy, to help people who have had a deficit. But most importantly, if a person has a stroke, we need to act quickly to try to prevent those brain cells from dying off in the first place.

**D** Dr. Halena Gazelka 06:31

Okay, speaking of acting quickly, in medicine we often talk about the signs and symptoms of a disease or an occurrence. So, a sign being something that we as medical professionals could see or anyone else could see, and then a symptom being something that the patient experiences. What about signs and symptoms of stroke?

**D** Dr. Robert Brown 06:53

Well, strokes tend to present with the sudden onset of difficulty doing something. In other

words, sudden onset of weakness in the face, arm or leg, sudden difficulty speaking or understanding others, sudden blindness in one eye, or the other, or both, sudden difficulty walking, sudden numbness on one side of the body or the other, sudden headache, unlike somebody has ever had before. So, these sudden onset of symptoms, sudden onset of difficulty doing something, this is the key symptoms that should be recognized.

**D** Dr. Halena Gazelka 07:33

Supposing that one of our listeners is either experiencing signs and symptoms themselves or is with someone who is, what is the next step to take?

**D** Dr. Robert Brown 07:43

Well, most importantly, if those symptoms occur, call 911 and receive emergency medical care, because there are emergency based treatments that are available that can lessen the impact of a stroke. And I should mention that one way for our listeners today to remember the stroke symptoms is the fast acronym, FAST, F standing for facial droop, A for arm weakness, S for speech slurring, and T time. Time to call 911 and seek emergency medical care.

**D** Dr. Halena Gazelka 08:26

So, time is of the essence because you've explained that time can make a difference on not only whether brain cells die, but also how extensive the injury is, or how many brain cells die. So, what kind of treatments are used for stroke when someone presents to the emergency department?

**D** Dr. Robert Brown 08:45

When a person presents to emergency room, what we will do is do a quick physical exam to clarify the nature of their difficulty. We'll do a CAT scan to clarify if there's any bleeding into the brain, or if it appears to be a lack of blood supply, stroke and ischemic stroke. If it's one of those more common ischemic strokes, then we consider how can we get the blood started again, how is blood flow started again, how can we get rid of that clot? We approach it in a couple different ways. Number one, we have clot busters, tissue plasminogen activator, it's a clot buster that we can give into the vein that can help to break up that clot that is blocking the blood flow and get the blood flow started again, and that's sometimes effective. Another specialized approach to treatment is an approach in which we actually advance a small plastic tube called a catheter from an artery down in the groin, all the way up into the blockage and we remove the blockage

directly via this little catheter, and so neuro interventional, neuroradiologists, neurosurgeons and some neurologists do that procedure in which we actually remove the clot directly from the artery.

**D** Dr. Halena Gazelka 10:15  
That just sounds absolutely amazing.

**D** Dr. Robert Brown 10:18  
Well, it really is, and on occasion, you'll see somebody who has a severe difficulty, paralysis on one side of the body, inability to speak, we'll go up, and one of our colleagues remove that clot, and essentially, immediately, they're able to start moving, they're able to start speaking and understanding. It's really remarkable, what can sometimes occur.

**D** Dr. Halena Gazelka 10:45  
Bob, some of our listeners might have a question about imaging for stroke. So, you know, we're all familiar with CT scans, or CAT scans, which are essentially kind of fancy x-rays, because they take a lot of x-rays and put them together. But an MRI we think of as sort of being a fancier test. Why do you use a CT or CAT scan at first, instead of an MRI?

**D** Dr. Robert Brown 11:08  
Well, it's a great question and CAT scan tends to be available in virtually any emergency room, even many very small hospitals in rural areas have a CAT scan available, and the key question Halena, at the time they present to the emergency room, is there any evidence of bleeding into the brain tissue? And is there already a stroke, a large stroke that we can see on the scan? So, a CAT scan often can give us the information that we need. And then we can follow that up with an MRI scan in a more leisurely pace, if you will, outside of the emergency setting.

**D** Dr. Halena Gazelka 11:48  
You know, I think one of the most frustrating things at times for patients and family members is this concept of prognosis. So, how we know how much function someone will recover if they do lose function during a stroke. And it seems like when I'm seeing patients in the hospital and speaking to members of your team, that it's hard to determine that right away. How do you know about prognosis? And how long does it take?

D

Dr. Robert Brown 12:13

Well, it's a great question too, and it can be difficult to say with certainty. Now, that said, there are several factors that we can consider, including, what is the stroke? Or how does the stroke appear on the scan? Whether it be CAT scan, or MRI scan, what's the size of the stroke. But more importantly, what is the clinical exam as we are examining our patients, what is the nature of their deficit when they present to the emergency room? And after we've implemented any emergency treatment, what is the deficit at day one, or day two, or day three. And that can help to guide us in terms of guiding the family and the patient regarding the prognosis. But again, there are other complex issues we consider too in terms of their other medical issues, and their age, because that can affect their prognosis in terms of how they might improve in the weeks and months ahead.

D

Dr. Halena Gazelka 13:17

Bob, a little earlier, we were talking about signs and symptoms, and I wanted to ask you a question about this concept of TIAs. So, if someone has been told that they are having TIAs, what does that mean? Does that portend a higher risk of a stroke in the future?

D

Dr. Robert Brown 13:33

Yeah, thank you for that question. A TIA is a transient ischemic attack. Transient meaning it comes and goes. Ischemic, meaning it's due to a lack of blood supply to the brain, and attack, meaning it typically comes on quickly. So, a TIA, patients who have a TIA have the symptoms like we talked about a little while ago, but they come and go, they resolve in several minutes or several hours. But importantly, if a person has those symptoms, don't ignore those, because they're a very important warning sign of a potential stroke that may occur in the hours or days or weeks ahead. And so, do seek care, because we can look into, we can investigate, why did that TIA happen, and then we can go ahead and implement the best stroke prevention strategy. And certainly, when it comes to a stroke, if we can prevent a stroke, either by controlling risk factors for stroke, which we'll talk about subsequently, or if they've had a TIA, we can do something about that and prevent them from having a stroke, then that's the best for the patient.

D

Dr. Halena Gazelka 14:51

I think that's a great point to make Bob, because sometimes, you know, we see people in a similar situation who might have some chest pain, but it goes away when they sit and rest are turn the television on, same thing with these TIA type of symptoms that they're not something to ignore, it means you need to get medical attention.

D

Dr. Robert Brown 15:09

Yeah. And understandably, human nature is such that if something comes and goes, we kind of ignore it and carry on with our busy lives. But when it comes to something like a TIA, my encouragement is please do seek care for that, because there may be some relatively easy stroke prevention strategies that can be put into place to prevent them from having a stroke from which it may be more difficult to recover.

D

Dr. Halena Gazelka 15:35

You mentioned risk factors, what are risk factors, and are there some that individuals can improve?

D

Dr. Robert Brown 15:42

Yeah, well, when we talk about risk factors, these are things that occur in a patient's or in a person's life, that put them at higher risk of having a stroke. And the controllable or treatable risk factors include high blood pressure, cigarette smoking, diabetes, high cholesterol, those are the big four, if you will. And then there are others that include what's called sleep apnea, which is a sleep disorder, obesity, a sedentary lifestyle, not getting any activity to speak of at all, heavy alcohol use. Those are some of those factors that we can control or treat in some way. And then, of course, age, important risk factor of a stroke that we can't do much about. And also, there's certain race, ethnicities, African Americans, Hispanics that are at somewhat higher risk of stroke, so not a controllable or treatable risk factor.

D

Dr. Halena Gazelka 16:45

I think it's kind of fascinating, Bob that and I've said this before on this program that so many of the disease states have some very common risk factors. We talk about smoking, we talked about high blood pressure, we talk about risk factors for cardiac disease and other risk factors. And it's kind of amazing that they seem to portend a lot of illnesses, not just stroke.

D

Dr. Robert Brown 17:10

Well, you're right, and several of the risk factors we talked about today are risk factors for vascular disease, meaning affecting the arteries in the body. And at the same time, one treats the risk factors for the vascular disease of the neck or brain, one is also having benefit in terms of lessening the risk of heart artery disease or arteries down in the legs, for

example. So, you're right, it does affect the body in a positive way, if we can control these risk factors. very broadly,

**D** Dr. Halena Gazelka 17:43

it's a good time for a little advertisement about regular health care and seeing a health care professional, whether that be a primary care provider or otherwise, to discuss what we can do to be healthier, it's an important thing to keep in mind.

**D** Dr. Robert Brown 17:57

No, you're exactly right. And when it comes to these risk factors, just being aware of one's blood pressure, and if it is elevated, there are so many different medications, some of which are quite inexpensive, tolerated very well, and can control the risk factor of high blood pressure, to having one's doctor or advanced practice provider help them to reduce smoking, or control their diabetes better. Or if a person has high cholesterol, start with a good diet, a very healthy diet. And then if that's not effective, there are excellent medicines available to lower cholesterol. So, in other words, knowing about the existence of these risk factors is really important for a person because they can be oftentimes controlled.

**D** Dr. Halena Gazelka 18:47

I'm so grateful that you're here today Bob, talking to us about this really important topic and so common, as well, and as we think about May, which is National Stroke Awareness Month. Any last words of wisdom or comments for our listeners?

**D** Dr. Robert Brown 19:03

Well, my main comment is know those symptoms of stroke, know the risk factors for stroke, and if you do see a friend, a loved one, or if you are experiencing those symptoms of a stroke, call 911 because we may have some therapies available for you to lessen the impact of that stroke on your life.

**D** Dr. Halena Gazelka 19:27

Bob, would you tell us that FAST one more time?



Dr. Robert Brown 19:31

Absolutely. The FAST acronym includes F for face drooping, A for arm weakness, S speech slurring, and T time to call 911 and seek emergency medical care.



Dr. Halena Gazelka 19:47

Wonderful. Our thanks to Mayo Clinic neurologist and stroke expert Dr. Robert Brown, for being here with us today to discuss the warning signs of stroke. I hope that you've learned something. I know that I have, and we wish each of you a very wonderful day.



Narrator 20:04

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