## Introduction and Guest Background

You have a seizure disorder, you know someone with a seizures disorder or you're generally curious about seizures, why they happen and how they're treated especially in the hospital.

In this episode of the Jaffercast, we're talking all things seizure disorders, status epilepticus and even conditions that can mimic seizures but are actually not.

Let's fucking go. Welcome everyone to this episode of the Jaffordcast. I am your host, Dr. Mark Papadakis. Nobody particularly important, just another fucking ER doctor.

This week we'll be talking with Dr Daniel Landau, neurologist mainly about seizures and seizure disorders. If you enjoy the content, be sure to follow us on all your favorite podcast apps as well as on YouTube.

Find us social media as I regularly post clips of episodes and in general spam the ever-living daylights out of my followers with medical nonsense. So without further ado, let's bring them in.

All right. I'm here, Dr. Daniel Landau. Dan, hey, how you doing? I am good, Mark. How are you? Thanks for having me. Very good. Glad you could be on here.

So, Dan Landow went to medical school at NYU and then did residency at first at Montefiore in the Bronx, and that was under just general neurology, correct?

Yes, the first year was an internal medicine prelim year and then three years of neurology. Okay, and they did fellowship in vascular neurologic at Montefiore as well, which is more commonly associated like strokes and diagnosis workups, things like that, right?

That's correct. Okay, what problems should go into neurology? So first of all, like, you have to understand everybody in medicine thinks neurologists are like the smartest person in the room of, all times.

Yeah, if you're not in a medical field, I do get that a lot. But honestly, it's just the ones who are more nerdy who end up going into Neurology. I don't think it has any basis of knowledge base or skill it's just whatever your preference is but the reason I went into it it was really just a matter of what I thought was most interesting and I was doing my rotations on my third year of medical school and i was just basically narrowing things down that I didn't like and eventually I either got left with internal medicine or neurology and The diagnosis I was seeing, the physical exam, I felt a little more hands-on with a lot of the things that we did at the bedside.

It was a combination of things, but ultimately, neurology just sparked the most interest in me. That makes sense. I had a very similar situation where you go through medical school, you're a third year, And you kind of rule everything out, basically.

Nothing, you either A, go in there thinking, okay, something is going to speak to me, or you basically go through something, and you're like, oh, I hate this.

Next station, Oh, hate that. And then you left with basically whatever is left over. A lot of my classmates have had that very, very similar experience.

Yeah, I only knew a handful who knew immediately on day one of medical school I will be an ophthalmologist or I'll be a urologist. There were very few who were like that.

Most I felt were in my camp who just knew they liked medicine in general but didn't read the pathway. When you

get into medical in your third year, you're thinking about your career but it's very unfair for medical students to figure out, okay, this is what the rest of my life is going to be like after a month or two in a specific specialty.

Medicine is so specialized nowadays that you got to figure out, well, if I'm going to do internal medicine, great, more options are open to you. But if you want to surgery or if want do psychiatry, you've got know that day one.

You know, that's and that something I didn't even realize going into medical school, how much pressure is on you to find something out so early. And I think nowadays, I mean, it's been I don't know how many years since I was in medical, but I they're trying to get students into the clinical setting earlier and earlier to try to give a little taste of what it might be like when you're out of medical school rather than only having that one-year window.

Third-Year Medical School, they throw you into the wards and then you got to apply within one year as if you already know what you want to do. Yeah. And you're also taking your board exams.

So you, so you gearing up for, you took one, step one board exam. Now you got to take a second set of board, exams at the end of your third year while managing residency applications, while trying to figure out your rotations.

It's, it's a lot of people don't realize it, especially those who are peripheral to the medical field. They don' know what kind of education and training goes into it.

So the main topic for this session is going to be mostly seizures and actually this comes from a viewer submitted request. She was a former nurse of mine and she wanted to talk about epilepsy and seizure disorders and in a way discuss some of the stigma behind that.

## What Seizures Are and Why They Happen

I think one of common questions that I get if I have a first time seizure patient in the ER is why? Why am I having a seizure Nelson? Do I a have seizure disorder?

What is it going on right now? Yeah, and that is basically the main question that needs to be answered because a seizure is really just a symptom. A seizure can happen to anyone and some people are predisposed to seizures.

People who are pre-dispose to the seizures who have recurrent ones more than once, those are people who were diagnosed with what's called epilepsy. But if you had a first-time seizure and the cause is not known, that's where the neurologist comes in to try to figure out is this just a one-off event that may never happen again or is there something in the brain that is causing this that could potentially happen in future if not taken care of.

So yeah, there's a wide range of why people have seizures. Every patient is different and getting to the root of what happened can help prevent this from happening in the future so i'm a big video gamer i've been playing video games since i was five years old but i remember at an early age seeing the instruction manual warning you know do not play if you have like epilepsy or seizure disorder so I grew up thinking okay flashing lights triggers seizures and I was thinking like well am I going to get a seizure from this and i think I don't know.

You know, is that something that can trigger on everybody only certain people? Yeah, so the flashing lights, that is something That makes a seizure more likely to happen in someone who already gets seizures.

So someone with epilepsy, you expose them to photic, what's called photics stimulation or repetitive flashing lights, that can make it more likely for that person to have a seizure.

But if you're someone who's never had seizures before and then you get exposed to flashing light, you should not have the seizure, but there are other things that CAN cause a normal healthy person have seizures that are sort of outside the brain that in anyone, like very low sugar levels for example, can provoke a seizure in anyone.

There's certain other things that we can get into that. But basically, flashing lights should only really cause a seizures in someone who has epilepsy.

And somebody who had epilepsy, now, do you see patients who have epilepsy who of just epilepsy alone or is it usually associated with other conditions?

Immune conditions or you know, chronic malformations like whatever, is just a singular diagnosis? More often than not, well, I guess it depends really what subset of people you're looking at.

I treat adults, but if you are a child who has epilepsy, children with epilepsy can have associated conditions as well. There can be some congenital malformations of the brain that can cause seizures.

But once you start seeing seizures in adulthood, It doesn't have to be associated with any other conditions. There are different forms of epilepsy, something called juvenile myoclonic epilepsy.

These are things that can develop in your teenage years, and you don't to have any conditions, you can be a normal healthy person without anything. You don' t need to an autoimmune condition, You dont have some type of in utero developmental problem.

So it is a wide gamut, but there are some people with very difficult to manage epilepsy who typically do have some type of brain malformation and those are diagnosed at a very early age.

Your primary practice is mostly hospital-based. You don't really have office settings, correct? So you see them mostly in the acute settings as opposed to like chronic management, right?

Yes, that's correct. Okay, so basically you're not an epileptologist, you are just a neurologist. Yeah, so I don't read the EEGs. I do not see people in the office for their checkups, their follow-ups their medication adjustments.

But if someone comes to the hospital with a seizure or multiple seizures, they'll get admitted to hospital and I'll manage their care when they're in hospital.

And you're getting a phone call from me usually too if I'm getting somebody who's I mean, we've taken care of together a few status epilepticus cases where basically, status epilepsy is a series of seizures that last for a very long time and we're talking 15 minutes or more.

And then, I'm giving them medication after medication to try and break the seizure. Then ultimately, if it doesn't break, now I am giving a third line of medication that effectively can really significantly depress the respiratory rate.

## Triggers, Epilepsy, and Status Epilepticus

Now I have to put them on a ventilator. you see them, and those patients, what's interesting is they could still be seizing. You know, we don't know it because ultimately I'm giving the medication to sedate them but even though they're not moving, their brains may be firing like crazy.

Yeah, that's right. So when something happens like that, is that typical of someone with epilepsy? Are these status epilepticus patients you know a number of them have epilepsy or is there usually something else going on that is triggering this?

The times I've seen status epilepticus, it's most of the time these are people with epilepsy who for whatever reason have a flurry of breakthrough seizures despite either sometimes patient may have run out of medication or they have some other infection concurrently that's making it their seizures to come out more frequently.

So it is more common. Most of time, these our patients already with Epilepsy, but you can have status epilepsy in patients who with a new diagnosis, let's say someone has meningitis.

They have brain infection. that can be disrupting the electrical activity and causing someone to go into status epilepticus. So there can an acquired condition very acutely that someone has a massive brain hemorrhage and the hemorrage is causing the seizures.

It's more likely someone already has epilepsy that they're going to have status epilepsy, but you can have these off cases where some new acute brain injury develops.

And we talk about infectious cause of seizures and things and you mentioned meningitis and it's important because from a public health standpoint, we have situations where people are questioning the legitimacy of vaccination and hepatitis.

meningococcus, meningesemia, all those. A lot of that can be prevented with vaccination. So now we have a situation where you don't see it in pediatrics because you work with a population, but a pediatric neurologist will see a patient in the hospital with seizures due to meningitis that potentially could have been prevented vaccination, let's say Meningitis clears from the patient when they're in childhood.

Does the seizures continue in those patients into adulthood? You see somebody who is, you know, okay, the meningitis is gone now, but you they had a seizure while having the condition.

Do you see that continue into adult? Are now they at more risk for epilepsy compared to somebody else? It really depends on the case and I've seen both.

I seen it where it's isolated to the acute illness that once the meningitis heals, then the seizures don't come back. But if someone has a more devastating case where its encephalitis where the actual, you get actual inflammation of the brain tissue.

Meningitis is just when the the outer membrane of the brain is inflamed. If you actually have changes in the brains itself, where you get encephalitis, those are people who often do have seizures long term, even after the acute illness is resolved.

Is this something that can be managed on one med, two meds? How often you see people on multiple medications or something like this? One medication is usually sufficient, but then you get into these uncommon cases where you maximize the dosage of the one medicine and people are still having breakthrough seizures.

So then, you escalate more medication. Now, typically, once you hit your third seizure medicine, then these are patients that are just, by definition, have refractory or very difficult to control epilepsy.

Most of time, one seizure medication can can control things, but some people require two or three. And once you're at the level of three, then there's other methods that are more than just medications that may be entertained.

There's more invasive type of methods like vagal nerve stimulation or even certain types of surgeries like epilepsy surgeries. Back in the day, electric shock treatments were staying for very much like psychiatric illnesses.

Is that for neurology as well, for seizures and whatnot? I don't see it happening. It might, but not really in practices that I've been working with, the epileptologist that i work with.

I dont think it's happening anymore. Yeah, it is more for psychiatric conditions. And there can be overlap between epilepsy and underlying psychiatric disease.

Yeah, one of the newest terms I've heard is non-epileptiform seizures. I think that's a term called, it used to be called pseudo seizures, but that had a very negative connotation to it.

And that's for people who don't have the generalized, you know, when we think seizure, right? We think of shaking. The whole body stiffens up, they shake, the lips can turn blue, all things like that.

But then you have patients who come in and maybe their arm is just doing one of these. That's a focal seizure. You have patience who will call them just stiffen up but not shake.

They'll just be staring into the distance. And it's such a very common pediatric seizure called absence seizures that

are diagnosed oftentimes. Yeah, so seizures have many different ways they present depending on whether the entire brain is involved or a portion of the brain's involved.

And they can, yeah, not all seizures look the same to a bystander seeing it happen. You brought upon the topic of non-epileptic seizures, which the outmoded name was pseudo seizures.

PC term is non-epileptic seizures. It can be very challenging because I mean, I just saw a patient this past week. She has epilepsy as well as non epileptic seizure.

These are cases that are difficult to manage because when you do the EEG monitoring, you can see that there's a region of the brain that has irregular or epileptiform discharges.

But then, so that patient actually is on anti-apileptic medications, anti seizure medicines But she does have as well non epileptic seizures that when the EEG is running, she's doing the convulsive type movements, but there's no changes in the brainwaves.

So these are people that, and they're not that common but they can be a clinical challenge because you don't want to treat too strongly. You might think that the patient is in what's called status epilepticus.

you mentioned status epilepsy earlier when you have seizures that are not stopping despite medications and that can very, it could be fatal if not treated.

So on the one hand, you do not want the patients to be in status epileptic, but on other hand if they are non-epileptic seizures, their brainwaves are actually firing normally.

what you might end up doing is over treating them and they can become overly sedated, they might need to be intubated and that can be a challenge as well.

## Non-Epileptic Events and Seizure Mimics

Yeah, I talked to the residents a lot about the usefulness of diagnostic testing but also from an emergency medicine perspective, procedures. Every procedure carries with it a risk and you don't want to do a procedure on a patient that carries risk if you do not need it.

Oftentimes, we talk about intubation, putting something on a ventilator being a big one. And let's say somebody with really bad asthma comes in, you know, they can't breathe, a hard time breathing.

The last thing you want to do is put them on the ventilators, if possible, because of something called air trapping, that can pop their lungs, right? The same thing for people who have seizure disorders.

If you have to put something ventilator because you're increasing the amount of medication you are giving them, it is what it. But intubation by itself carries a lot of other issues too.

You can have vocal cord damage, you can also cause what we call barotrauma or lung injury. And you could also just have somebody just drop their blood pressure with the medication your giving.

that fine line of treating what you're seeing, but also trying to balance between is what I'm seeing a true seizure? Can this be managed in other means and not?

It's difficult, especially in my perspective where you have to make a quick decision. What do I do? Do I take this person's airway? I dial back the medication?

A lot has to come with knowing the patient's history too. From my clinical experience, there aren't that many patients on the grand scheme of things who have non-epileptic seizures.

The ones who do, they often come to the hospital frequently. I know the ones that do roll in frequently, if someone in the ER reaches out to me and and identify that this is someone who has non-epileptic seizures, we can try to avoid any unnecessary potentially harmful procedures if we could avoid it.

But that's right, yeah, the history is always very helpful. If there's no one at the bedside and the patient's unrecognizable, then you're left with guessing.

Yeah, and of course the other thing is these medications that we're giving are not benign by themselves too. You know, so correct me, Keppra is a sodium channel blocker, is that correct?

Yes. That's like, I feel first line for many patients, even the ER, if I don't know what's going on, i'll just give them Kepper, but that can cause low blood pressure, it can cost hypotension.

So I run the risk of if i give him too much, now the blood-pressure drops and you know I have a patient with low-blood pressure who can't perfuse their brain, that's another issue altogether.

Yeah, every anti-seizure medicine has its own set of side effects. Keppra tends to be the most well tolerated of the rapidly infused anti epileptics, but yeah, Dilantin is one that can really drop your blood pressure and your heart rate.

But yeah anything that you're giving to a person could potentially have adverse effects if some people have allergies, some of you have side-effects. I want to actually talk about something.

Switch gears a little bit about overall seizure picture because one thing I tell EMS and the residents and students and all that is not all shaking is seizure.

I always say the patient exhibited seizure-like activity without knowing their history. Again, patients are coming in, I don't know them, they have no history that we know of, but bystanders called 911 because they were having a seizure, And I feel like that comes out to be 50% true, you know, like the patients exhibit shaking that people think, oh, he's having a seizure.

But the reality is I could have just passed out and you can't have shaking when you pass out. What's… So, yeah, there's a condition called, it's technically called convulsive syncope.

So a person loses consciousness has, and then right after losing consciousness, There can be jerking movements, like typically it's myoclonic jerky movements of the arms and legs, and it is not a seizure, it just is an immediate reaction to passing out.

And that can happen in a healthy person, but it can look very much like a seizures. I remember most neurologists probably were exposed to this at some point in medical school.

There's this really grainy video from the 80s from Germany, there's these medical students that voluntarily submitted themselves to syncope like they were like hyperventilating and they're on like a gym mat.

And there was a line of medical student and each one would hyper ventilate to the point where they syncopize and then they would just fall on the floor and you'd watch them and about half of them after kind of like being lowered to the floor, their body would start convulsing for maybe 10 to 20 seconds.

Not everyone, some of them just kind felt it lower to ground and did nothing. But that was to demonstrate that the mere act of passing out can involve jerking movements of the limbs that look like seizure and they're not.

It's interesting because I feel like nowadays that would be like a TikTok challenge. You know, make yourself pass out and then let's see if you shake or not.

Now, I'm not saying do that, please, for the love of all that is holy, and make this not be a Tik Tok challenge, but I can just see, you know like Next Generation doing something like that.

So there was actually a very good video of Hank Gathers, who unfortunately was an athlete. He was in college, he was a basketball player in College going to, but he unfortunately died on the court of a game from an arrhythmia.

Well, we now know hypertrophic cardiomyopathy, or basically an enlarged heart. And his story was one of the reasons for now putting AEDs into schools and gyms and everywhere else.

Yeah, but if you look at the video and I tell this to my EMS crew that It looks like he he falls to the ground and he has shaking he almost like He looks, like, he, has a seizure and i asked my ems crew What do you think that call went out as and a lot of them will say seizure?

You know, oh he had his seizure because he actually woke up He got up and then he you know passed out again But he's basically going to cardiac arrest but cardiac arrests can also look like yeah a, seizure That's right, that's all right.

How is there a good way, clinical way to differentiate between the two? Like how do I know somebody's having an actual seizure versus going to cardiac without obviously a cardiac monitor with just you know walking along the streets for say.

There are certain clues now not everything is foolproof but if someone has what's called a generalized tonic chronic seizure so when you have stiffening followed by jerking, convulsion with loss of consciousness.

More often than not, patients will clench down, their teeth will clinch down on the side of their tongue and very frequently you'll have this tongue laceration on sides of the tongue, not the tip.

And that's a unique feature of a generalized tonic-clonic seizure. So that is noted. if you when you look at examine the patient that that can be a sign of that this was a seizure and not some other form of syncope.

## Diagnosing Seizures in the Hospital

If also the phase after a seizures is what's called the post-ictal phase when the brain is overly exhausted because during a seizure you get this very this increased metabolism of the Brain and it depletes a lot of energy.

So afterwards people are typically very tired, drowsy, sometimes completely snoring, not rousable. If that phase is present, it's very likely it was a seizure.

if there is no phase of drowiness, lethargy, and the patient is pretty much back to themselves right away, It makes it less likely. It's a Caesar. Now there's caveats with that because there can be part of it.

There's always exceptions. Yeah. But yeah, but if you see that the tongue bites on the sides of the time, that's a key feature. If there's prolonged post atrial phase, also if someone urinates on themselves that could be a sign of a seizure that doesn't always happen and it can happen in other settings too.

But those are some of them. We're often left with the same question that you posed that we don't know if there was no witness that is even harder. Most of time we'll do a preliminary workup in the hospital.

with an EEG to see if there's any irregular brain wave activity. Now, the EE is a test that can be in patients with epilepsy, you can often have a normal EE.

So just having a normally test doesn't exclude the diagnosis. If you have an abnormal test, then you could rule in the diagnoses rather easily. What is it?

Specific but not sensitive? Yeah, I was just going to say, it sounds like that old stats line. It's not sensitivity, but it's very specific. That is the main one.

Now, and that's, is that the quote-unquote gold standard? You know, that is a thing that, you know if you have any

EDS positive, boom! That's a gold-standard, we're done.

If it's not, now let's say, obviously you don't do the outpatient world or not but, patient comes into the ER. I do a cardiac work-up thinking, well, it sounds more seizure-like but you do not have a history, let me do cardiac-workup too.

That comes back fine. And I start thinking, this sounds like a seizure. Now what? What do I tell the patient? Because I'm not admitting every seizure patient to the hospital, well, hopefully.

But what do i now tell that patient, like, hey, you probably have a seizures disorder. Should you drive? You know, what am I doing? Well, in addition to EEG, we do imaging of the brain.

A CAT scan of brain is pretty much the standard and sometimes we'll do MRI as well. So yeah, once you've gotten, a person has had a seizure and let's say it's the first one, if it is the 1st seizure, and you don't identify anything wrong on the brain, like you dont see any scar tissue in the brains, you do not see blood in your brain.

If the imaging looks normal and the EEG looks normally, then you are at a crossroads. What typically I do is I don't treat after a first time seizure with seizure medications because this could just be a fluke one-off event that might never happen again.

And then if you start anti-epileptic medications on the patient, then you're basically telling them they have epilepsy and there is restrictions with driving, restrictions sort of heavy machinery type work, and you dont know this might not happen So that's one scenario.

First time seizure, you don't have any concrete abnormalities on any of the imaging. If, however, it's recurrent, let's say they had a seizure a month ago and they come in with another seizure or at least two seizures, more likely three or more.

But yeah, I guess by definition you have atleast two seizure. At that point I would then treat, even if the image is normal. It is pretty commonly normal in a lot of patients with epilepsy.

And at that point, you can start one of your common anti-epileptics like Kepra. You would want to have them referred to a neurologist. They may want do longer EEG monitoring.

In the hospital, we often do these routine EEGs that are about 30 minutes to one hour of recording. But if you do a longer monitoring, which is over days, You have a higher likelihood of catching a seizure or just an irregular brain wave that could tip you in the direction of epilepsy.

Would you submit a patient in the hospital to something that would trigger the seizure? Like would you show them flashing lights or something to that effect to try and, while they're having the EG?

Yeah, so there's different things that we do. One of them is, it was funny you mentioned earlier, the flashing light. It's photic stimulation. That's one thing that can subject our patients to and the other is sleep deprivation.

So keep them up late. So there are certain states that can make a seizure more likely to happen. So yeah, if you're sleep deprived, you stress the brain with lights.

The other thing that could be done, which isn't done as frequently anymore, but you can hyperventilate someone and that's not usually done too frequently.

It's only in Germany in the 1980s apparently for experiment purposes. And one thing that people need to be aware of too if they're on seizure medication is alcohol use.

You know, other medications can what we call lower the seizure threshold, meaning if you have a history of seizures and you're under medication, that can make you more predisposed to having a seizure because it can

affect the neurochemical process in the brain, but alcohol is also one of those drugs that does it.

In fact, we often see our chronic alcoholics come in with a seizure and for the ER, is this person having an alcohol withdrawal seizure or they're having a epileptic seizure just because either they are not taking their seizure medication or their taking the medication but they decided to go and binge drink for a weekend too.

Yep. Yep, that's a challenge we see all the time. Alcohol went in withdrawal affects the GABA receptors in the brain and that can cause seizures. And then I didn't get into some of the nitty gritty of like what is epilepsy and what just a seizure.

So you can distinguish epilepsy from just seizure without epilepsy as to whether or not it's provoked. A provokes seizure is something that is outside the brains that induces a seizures so alcohol is a provoking agent.

## Treatment, Medications, and Lifestyle Management

So if someone drinks heavily and then goes into withdrawal, that would by definition be provoked seizures and not truly epilepsy. Now, oftentimes I've seen this in patients with alcohol withdrawal.

A lot of times patients without alcohol use get head injuries. And so I have seen people with both epilepsy and alcohol withdraw seizures in the same patient.

These are people who would be on long-term seizure medications but so they have epilepsy, but they're also drinking, which is lowering their threshold for seizure in addition.

And they fall, they hit their head, and they can get severe concussions enough or severe enough head injuries that now they a TBI, basically a total brain injury, Which also makes them more predisposed to having seizures too.

We see a lot of that I think in, you know, veterans and things, sports players, professional players who get hit in the head a lots, football players being one as well.

It's tough because there's also, like I said before, a bit of a stigma attached to seizures. The idea that if you have a seizure, you're disabled and that's very much true.

There are things you cannot do and you mentioned already, You can't drive. You should not be operating heavy machinery. So now you'll have whole lifestyle adjustment and a lifestyle impact by one diagnosis and it's not a diagnosis to make lightly.

So with driving, it's not a permanent removal of your drivers license. So every state has different laws in New Jersey. It's six months. If you're diagnosed with epilepsy, meaning you have a predisposition to seizures requiring medicine to treat, You can still have a modified driver's license as long as you don't drive within the six months of your last seizure.

Without any seizures for six month, you can go back to driving. That's just the threshold that different states have different thresholds. I think Maryland might be three months, but New Jersey, Pennsylvania, six months.

I think New York was maybe one year, but things may have changed since I last worked in New york. So it's not a complete, I can never drive again scenario.

It's once things are under control, then you can go back to driving. But we don't want to rush you into it because having a seizure while driving can be fatal.

And I think that's something that people need to be aware of too. It's not that, okay, now I have epilepsy, my life is ruined here. No, no, you need be very cognizant of what you put into your body, what your expose your to, but also obviously, take the medications as prescribed to adhere to that regimen because otherwise any deviation, it's going to a problem.

With controlling seizures, there can be lifestyle modifications that can help, but ultimately, if seizures are occurring without medication, then basically adherence to that medication is of the utmost importance.

In addition to that, trying to improve sleep habits, improve dietary intake, lowering stress levels, these are all things that can make it better in the long term to prevent seizures in addition the medicine that's being prescribed.

And you know, you talk about a lot of that, sleep habits, diet and all that lifestyle. These are issues that keep coming up among all the guests that I've had on here.

You know pediatrics, internal medicine, now neurology. We hear a lots recently in the news about, making America healthy again. And there's an underlying element that is true, which is there is a a in that we do in our daily lives is unhealthy.

food choices, activity choices that predispose you to many other conditions and if you have chronic illness even more so. I think that needs to be addressed so much more and just not in a primary care level but also in the hospital setting, in ER, and in inpatient wards where you really have to hammer down the education.

The medication is going to help control this but it won't stop everything. We have a discussion of what your daily routine is like, what you're eating, And I wish there was more resources that we can give patients, especially in the hospital, to kind of push them towards that, but there isn't.

It's frustrating. I know. And it's not only with epilepsy. My fellowship's in vascular neurology and stroke. There's many lifestyle modifications that can prevent that stroke from happening so that they don't even need to see me in a hospital.

But it is a combination of things. Especially for epilepsy, lifestyle changes alone won't fix the irregular electrical pattern in your brain. So the medicine is really the only thing that can prevent that seizure, but there's things that in addition can help improve your chances of not having further seizures.

Yeah, and it's all important for people to understand that people who have seizures, it is not their fault. It's not something they did or didn't do. You know, developmentally, you could be a healthy developing person and here we are.

There is a correlation and I talked about it in another episode about febrile seizures where if a child has complex februle seizures from an illness and we touch on some of those, hepatitis, meningitis whatever, they do increase the risk of epilepsy and seizure disorder into adulthood but it only about like 3 to 5 percent.

It's not a guarantee. But beyond that, you just don't know. Your brain could be hardwired differently and that's your fault. That's the fault of the parents or anybody else.

There should not be any type of stigma towards epilepsy. This is out of a realm of control. Some people may have developed it later in life. the way things are.

It should not be looked upon as a disability. People with epilepsy can live fulfilling, normal lives. There's an additional component that just has to be taken care of.

And you mentioned about stroke and vascular and all that. I do want to get you back on here. There's a lot to talk about with stroke. So much information, misinformation.

Capital Health is having a stroke conference. It's coming September, I believe September 23rd. If you want, check the hospital's website, CapitalHealth in New Jersey, if you're in the area and you are a healthcare provider, please by all means check it out, register.

Cause I'm going to be one of its speakers. Oh, wonderful. What are you talking about? What's the topic? Oh I'll be talking to everybody's favorite clot buster, TNK.

Wonderful. I am trying to rope in some of my colleagues to have like a panel in a way to a conversation about this pros and cons and all that.

## Stroke, Seizure Risk, and Closing Thoughts

So far, nobody's biting. I think everybody's too scared. So, I might have to bribe some people. But, you know, so I, think maybe in September, have you back on, talk about stroke a little bit more, tie that in.

Is that, is September Stroke Awareness Month? Is, that what's going on? There's, there's everything has an awareness month. Yeah. Okay. Maybe every month is some type of awareness.

I thought May was Stroke Awareness Month, but maybe they're trying to add a second month to the year. But yeah, there's one other thing I want to mention just tying stroke to epilepsy.

The most common cause of seizures in adults is actually a previous stroke. So strokes cause scar tissue to develop in the brain and typically not on the same hospital admission.

It's usually months afterwards. If someone has a stroke, they recover from the stroke. And then months later, out of nowhere, the patient has the seizure.

That is a very common scenario that I encounter. But this is typically more later adulthood that that i'm seeing. I believe it is statistically the highest cause of epilepsy in adults.

Are you starting patients on seizure medication if they've had a stroke then? Yes, because that scar tissue is not going away, that will always be there.

That scar tissues that's developed disrupts the normal electrical activity and therefore even if it's a first time event, even I don't catch anything abnormal on the EEG, I'm very much inclined to treat just knowing that there's been a disruption of the brain phase.

So somebody who comes into the ER, basically they've had a stroke, we admit them for the stroke. They go home, they're, you know, in whatever functional state they are.

You're not necessarily starting them on seizure medication at that point. But if they come into ER six months later, and I see, yeah, I had his stroke I was here six month ago, now I've got a seizure.

We're done. I'm starting my seizure medication. If the stroke was large enough in the cortex, it depends really what region of the brain, but there's frontal lobes, parietal lobe, occipital lobs.

These are regions of brain that can lead to seizures. And if the stoke was larger enough, I would very likely just treat for epilepsy at that point. SANS imaging, SENS EEG, are we still getting all that?

We're still still get it. Also, sometimes you don't know sometimes that they're having subclinical seizures that are not necessarily being identified.

So you would want to get the EEGs as well just to make sure things are under control. Oh, so we would do all the work, but my likelihood of keeping that patient on the seizure medicine is very high.

That's good to know for EM in general as inpatient practices. Well, Dan, thanks so much. Thanks for coming on. Thank you for having me. That was a good talk.

Like I said, we'll get you back on here. Talk about stroke at some point, maybe not May of next year. Yeah. During Stroke Awareness Month, but obviously, hopefully in the near future.

I'd be willing to talk about other topics. Sounds fun. All right. Well Dr. Dan Lando, thank you so for so coming. Take

care and we will see you next time.

Alright. Alright, that wraps up another episode of the Jaffer Gasts. Thanks again to Dr. Dan Landau for joining me. We talked about seizure, we talked risk factors, treatments, conditions, and we also discussed the stigma behind it, which is it really shouldn't be a stigma.

Obviously, a lot of choices of your own health are tied into food, sleep habits, normal healthy lifestyle, but seizure epilepsy in general can be something that is acquired later in life from infection or something you just unfortunately happen to have.

So please, if you have something like this, as always, I encourage you to speak to your regular doctor and find treatment choices that are right for you, especially if have questions about your own health.

I always encourage constructive thoughts, comments, and suggestions about this show. You can leave them in the comments section for those on YouTube or email them to me at jaffercast at gmail.com.

If you're in the healthcare field and interested in being on the show to discuss topics in healthcare, or if you have a passing interest in health care topics as well, please feel free to reach out.

It's like with anything though, don't take my word for it, do your own research, talk to your doctor, because at the end of the day, like everybody else at work reminds me, I'm just another fucking ER doctor.

Make a choice everybody, we'll see you next time. Yeah.