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Tonight, a mysterious illness strikes hundreds of government officials.

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In the middle of the night, I woke up with a room of spinning.

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I had a terrible case of vertigo.

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I was frankly terrified.

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Ongoing investigations raise more questions than answers.

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It's causing a lot of confusion, frustration,

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00:00:23,000 --> 00:00:27,000

and really starting to feel kind of like they're in some sort of bad spy thriller.

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Now, we reveal the top theories behind this bizarre epidemic.

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This could have been caused by something that was already inside the embassy staff quarters.

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These chemicals have been used in some of the most deadly chemical attacks on the planet.

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Could some foreign power have developed a new sonic weapon?

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What's behind the strange phenomenon known as Havana Syndrome?

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The Havana Syndrome

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The Havana Syndrome

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The Havana Syndrome

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The Havana Syndrome

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The Havana Syndrome

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November 2016, Havana, Cuba.

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As the sun sets on the island, a U.S. diplomat and his wife are unwinding with friends.

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This couple has just moved to Cuba, and their names have been kept anonymous in reports,

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00:01:26,000 --> 00:01:33,000

but the diplomat and his wife are living in an upscale development called El Country Club.

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They're having neighbors over for drinks, and suddenly they hear this sound,

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and it fills the air and sounds kind of like cicadas, only it's a more piercing metallic sound.

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The noise persists through dinner.

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At the couple's request, maintenance workers check the property for insects

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and look for any electrical issues that could be causing the racket.

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But they find nothing.

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The sound lingers for three months, during which time the couple falls ill.

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He and his wife have been feeling off ever since shortly after the sounds began,

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kind of cloudy with difficulty concentrating.

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After a while, the diplomat shares his experience with coworkers at the U.S. Embassy.

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A colleague in his 30s says that he also heard this high-pitched sound

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and started to experience health issues, and he plays some audio that he's recorded of the incident.

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It's the same noise the diplomat's been hearing for months.

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Days later, that diplomat and his wife are examined by doctors in Miami

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00:02:38,000 --> 00:02:43,000

and diagnosed with concussion-like symptoms, headache, fatigue, disorientation, and balance issues.

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00:02:43,000 --> 00:02:48,000

More diplomats and others start reporting exactly the same set of symptoms.

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Over the next two months, more than two dozen officials in Havana are diagnosed with the strange condition.

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What's even worse is some of these victims enter a second phase of the illness,

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where they have even greater cognitive difficulty and trouble hearing or seeing.

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It's really horrible. These symptoms have just appeared, and there appears to be no treatment.

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You have to wonder, what could cause this in so many different people?

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To try to learn why, the U.S. government opens an investigation in January of 2017.

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The first group of embassy employees are thoroughly examined in the United States,

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and a report is published in the Journal of the American Medical Association in 2018.

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Perhaps most seriously and notably, the study concluded that the patients had sustained widespread injury to brain networks.

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There is a clear physical change that has happened to the brains of these patients.

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It's visible in the MRIs, but that change is minor compared to the results of several neurological tests

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that target memory, executive functioning, and spatial orientation.

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According to the study, these same severe effects would occur after a devastating car crash or explosion,

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but none of these victims have experienced that type of trauma.

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At a loss, doctors dubbed the mysterious illness Havana Syndrome.

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Is some strange virus or infection spreading through the American embassy?

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This of course is a huge concern to multiple government agencies.

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For no apparent reason, their staffers are suddenly dropping like flies.

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It's not killing anyone, but it's making them pretty much unable to function in their jobs and sometimes in their daily lives.

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In 2018, the U.S. government brings in the CIA, Defense Department, State Department, and CDC to further investigate.

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At the earliest onset of symptoms, these victims are hearing a chirping, a screeching, a clicking,

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and they're also feeling a certain pressure in their heads.

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They say they're hearing these sounds in their homes or in their hotel rooms,

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00:04:59,000 --> 00:05:07,000

and there's a certain directionality to the sensation, almost like it's coming through a wall or in a specific part of the room.

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Diplomats and CIA officers or spies are the ones who are afflicted.

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This is not affecting the general public.

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So the U.S.'s first guess is that it could be a covert sonic weapon.

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In October 2017, President Trump holds a news conference where he calls the incidents quote,

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a very unusual attack.

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He's going public with the idea that this is a weapon.

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Sound like anything can be and has been weaponized.

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It's not something we think about because we can't see it, but at certain frequencies, it can cause vomiting and internal distress and maybe even death.

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It's something the Nazis try to harness during World War II.

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The Nazi regime had a team of scientists working on wonder weapons which they claim would revolutionize the war.

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And their chief architect, Albert Speer, develops one that's called the acoustic cannon.

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The idea is to kill or injure someone by focusing or magnifying sound waves on a reflective dish.

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At a distance of around 600 to 1200 feet, the sound is reported to cause vertigo and nausea by vibrating structures in the inner ear.

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At closer ranges, it could even damage internal organs.

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But this weapon has one serious flaw.

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It's huge.

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The reflector dishes are so big that it's hard to maneuver and any damage to the dishes would render it entirely inoperable.

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While the Nazis acoustic cannon was never used in battle, it paves the way for modern versions.

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In the early 2000s, the U.S. developed a weapon that it called an LRAD, Long Range Acoustic Device.

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These LRADs are capable of projecting very powerful pulses or beams of sound up to two miles away.

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And if you set it to emit high decibel chirping or beeping sounds, it could also be used as a deterrent.

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Nowadays, our military uses LRADs for everything from crowd control to repelling pirates from cruise ships.

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At a high enough decibel, LRADs can be used as weapons.

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They're certainly capable of creating pain, nausea, imbalance, and even permanent hearing loss.

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It's a promising lead, but experts say there's one problem with the sonic weapon theory.

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LRADs are not subtle weapons.

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They are definitely very, very loud.

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And given that none of the patients in Havana reported hearing a loud sound, their reports are not really consistent with the use of an LRAD.

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So the next question becomes, could some foreign power have developed a new sonic weapon,

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one that somehow produces the same effects by primarily using sound outside the range of human hearing?

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There's no evidence found in Cuba.

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But in 2019, the Chinese Academy of Sciences announces a prototype for the first portable sonic gun.

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The Chinese claim that they use focus waves of infrasounds.

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These waves painfully vibrate the subject's eardrums, eyes, and brain.

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It may mess with the inner ear, causing vertigo and imbalance.

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Infrasound may also cause nausea, vomiting, bowel spasms, and potentially affect internal organs, like the heart.

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In field tests, according to the Chinese team, it produced extreme discomfort.

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Of course, this thing had to have been developed and tested years prior to 2019, possibly even field tested covertly.

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According to the South China Morning Post, which first reported the story, this device has been approved for mass production by the Chinese government.

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If that's the case, it's definitely been in the works for quite a while.

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Still, many doubt this technology is the source of Havana syndrome.

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In the end, infrasound would be a poor choice because it spreads in all directions.

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It would be difficult to target specific individuals.

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Infrasound can't be easily focused.

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It would also affect the user of the weapon, probably more so than some of the targets since they're closer to the source.

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And frankly, the effects from an infrasonic weapon would probably be more annoying than debilitating.

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In February of 2022, the Office of the Director of National Intelligence and the CIA state that there's still a possibility that this could be a sonic weapon in Havana.

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But it would need to be placed extremely close to the target, meaning against a wall or through a window.

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In some of these Havana cases, the victims were in secure facilities away from public access.

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So is it possible that this was a sonic weapon?

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Sure. But is it probable? No.

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The more surprising theory.

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My laboratory uses analog signals to break into computer systems with lasers, acoustics, and sound waves.

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In other words, Dr. Fu specializes in hacking some of our most sensitive electronics to identify security flaws and protect against them.

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A few of the examples include creating a homemade radio transmitter to induce fatal heart rhythms in a defibrillator.

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We have used laser pointers over hundreds of feet to take over voice-controlled assistants.

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We have also turned hard drives into listening devices through some of the mechanisms on the inside of the spinning disks.

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So when Dr. Fu first hears about Havana syndrome, he realizes, hey, this sounds kind of like a phenomenon I've encountered before.

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My whole job is to glitch out electronics, and maybe that's what this is, a glitch.

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Dr. Fu believes the Havana syndrome conditions could have occurred without any massive secret weapon.

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This theory states that this could have been caused by something that was already inside the embassy staff quarters.

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According to Fu, there is a good chance the afflicted American officials were under surveillance while in Cuba.

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A detail he thinks is key to solving this puzzle.

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I believe that some kind of unintentional accident with malfunctioning eavesdropping devices may have caused the sensations that the witnesses reported.

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When Fidel Castro comes to power in 1959, American diplomats are unwelcome in Havana for nearly 20 years.

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But in 1977, the United States reopens a limited diplomatic relationship to work with Cuba on areas of mutual interest.

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From then on, the Cubans keep a pretty close watch on any American diplomats in their country.

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As a State Department official, you'd come home and maybe you'd see the TV on or the window open.

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And you might be thinking, what's happening? And then you realize that Cuban spies want you to get this message.

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That if you think you're being watched, you probably are.

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It's almost like a game sometimes. There are reports of things like an undercover CIA agent finding his tires punctured or maybe his family pet is poisoned.

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Eventually in 2015, an American embassy reopens in Cuba.

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One year later, the first cases of Havana syndrome are reported.

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This is one reason why the sonic weapon theory never made sense.

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Why would the Cuban government initiate a brazen attack on American officials at the very moment when they're reopening diplomatic relations? It just doesn't add up.

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That doesn't mean the Cubans quit spying on Americans. Of course not. Everybody spies on each other and we find their devices frequently.

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So when we looked at what the witnesses reporting about the sensations in Havana, we started brainstorming about all sorts of different kinds of conditions that could make an eavesdropping device produce the same signals that the witnesses heard.

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If you're going to conduct a spying operation, you can't just hook up a hidden camera to Wi-Fi. You've got to do it in a way that will go completely undetected.

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And we know that one way spy devices secretly transmit information is through the ultrasonic frequency range.

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Ultrasonic technology is most commonly used in healthcare applications, motion detectors, and pest repellents. It's generally considered harmless.

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But Dr. Fu's team has discovered a scenario where ultrasonic transmitters could become dangerous.

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There's an interesting phenomena when two signals interfere with each other to create a third tone. It's called intermodulation distortion.

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So although ultrasound is not audible and is designed not to be audible, if two ultrasonic transmitters come together and cross paths in the air, they can produce a byproduct that is quite audible to the human ear.

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Dr. Fu's team is able to replicate this phenomenon, creating the same metallic chirping sound recorded by American diplomats.

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If you listen to the audio recordings of some of the incidents and the sound from our experiments in the laboratory, we found that the two signals were essentially identical.

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But could these sounds actually make people sick? According to Dr. Fu, it's possible.

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We don't know if these particular sounds caused harm because our experiments were all confined to the laboratory, not involving human subjects.

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00:14:52,000 --> 00:15:02,000

But we do know that sound can cause harm. It can cause nausea, internal distress. It can even cause harm to the human body at intense enough frequencies.

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00:15:02,000 --> 00:15:05,000

But not everyone's convinced.

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00:15:05,000 --> 00:15:18,000

It doesn't make any sense as an intentional act at the very least. If you're spying on somebody, you do not want your devices that you're using for surveillance to drive away the people that you're trying to spy on, which is exactly what happened.

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The reason why Dr. Fu and many others have researched this is because there's no answers to what is causing the Havana syndrome. The U.S. government hasn't been able to figure it out.

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At least Dr. Fu has replicated the noise, and that's more than most people have accomplished.

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Part of the scientific process is about exploring many different hypotheses, some of which may turn out to be incorrect or less likely.

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But we hope that the research done in my laboratory is helping us come closer as a community to a

conclusion to solve this mystery.

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Initially, the mysterious Havana syndrome only impacts U.S. diplomats in Cuba. But by March of 2018, diplomats at another embassy in Havana fall victim.

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It starts happening to the Canadian embassy staff. This is very strange because the Canadian embassy is about three miles away from the U.S. embassy, so it's not like they're adjacent or anything.

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00:16:13,000 --> 00:16:27,000

Canadian diplomats and their families start reporting exactly the same kinds of symptoms U.S. embassy staff had reported. Disorientation, nausea, dizziness, ultimately 40 Canadian diplomats fall ill.

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And so the Canadian government ends up pulling its diplomats out of Cuba.

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By 2019, Canada's workforce in Havana is reduced by half.

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00:16:38,000 --> 00:16:45,000

This illness, whatever it is, is severely limiting their ability to conduct diplomatic relations in Cuba.

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That same year, Canadian officials launch their own investigation.

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At this point, the Americans are probably glad to have the help. We've got no clear motive, no clear means, and no good suspects.

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It's causing a lot of confusion, frustration, and really starting to feel kind of like they're in some sort of bad spy thriller.

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Among the Canadian researchers is Dr. Alon Friedman, who works at a highly regarded brain research center in Nova Scotia.

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Dr. Friedman is a neuroscientist who studies the blood-brain barrier, and in particular the chemicals that can cross that barrier, which typically protects your brain from most chemical attacks.

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Although some researchers have looked at the causes being maybe sonic or physical, Dr. Friedman is looking to see if it may be a chemical characteristic.

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While the blood-brain barrier does protect against a lot of chemicals, it turns out that the number of chemicals that can cross that blood-brain barrier is still very large.

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And so Dr. Friedman wants to look at every possibility. It's not even really finding a needle in a haystack.

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00:17:50,000 --> 00:17:56,000

It's looking at a haystack and not knowing if there are any needles inside.

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00:17:56,000 --> 00:18:04,000

Dr. Friedman conducts brain scans and MRIs on 23 Canadian diplomats and their families.

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00:18:04,000 --> 00:18:12,000

Initially valuations confirmed, the Canadians have damaged brain tissue just like the Americans.

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In addition, Dr. Friedman conducted a range of blood tests, as well as something called mass spectrometry.

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Mass spectrometry is a technique that creates a fingerprint for a chemical, allowing you to tell exactly what is there and how it's comprised.

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Specifically, he was on a search for neurotoxins because all the symptoms are consistent with some sort of damage or effect on the nervous system.

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Turns out they find neurotoxins. They find them in every single symptomatic patient that they test.

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Well, everyone has some toxins in their body, but based on this study, it appears that the Havana syndrome could have been caused by a chemical weapon.

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The pattern of brain injuries in the patients from Havana were consistent with regular low-dose exposure to a class of neurotoxins called coloniserase inhibitors.

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These chemicals have been used in some of the most deadly chemical weapons attacks on the planet.

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Now, coloniserase inhibitors, as the name suggests, inhibit coloniserase from working.

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This chemical is crucial for the communication between the brain and the muscles.

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If your brain cells cannot talk to each other, then you have problems thinking.

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Some coloniserase inhibitors have been weaponized.

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One famous example is sarin, originally developed by Hitler's Nazi Germany.

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It was so devastating that even Hitler was scared to use it.

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Another variant of this chemical is called Novichok.

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This was a chemical that was found in the bloodstream of Russian opposition leader Alexei Navalny, who was poisoned in 2020.

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Obviously, coloniserase inhibitors can be very dangerous, even deadly.

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And so Dr. Friedman wants to find out exactly what kind of coloniserase inhibitor is affecting these patients.

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After further testing, Dr. Friedman's team is able to identify the chemical.

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It isn't as nasty as sarin or Novichok. It is something else called temaphose.

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Temaphose is not particularly lethal, but regular exposure can cause symptoms such as dizziness, disorientation, sensitivity to sounds,

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00:20:27,000 --> 00:20:31,000

symptoms that align with what was reported in Havana syndrome.

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00:20:31,000 --> 00:20:36,000

When the Havana syndrome first hits the news, a lot of people are saying this sounds a lot like a weapon.

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But there's also a less sinister possibility.

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00:20:40,000 --> 00:20:45,000

Temaphose is used widely throughout the world as an agent to control mosquitoes.

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00:20:45,000 --> 00:20:52,000

It attacks the nervous system of the larva, preventing them from turning into adults, and therefore

helping to stop the spread of mosquito-borne illness.

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00:20:52,000 --> 00:20:54,000

It is, in sense, a pesticide.

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00:20:54,000 --> 00:21:00,000

Dr. Friedman concludes that these diplomats and their families have been exposed to pesticides.

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00:21:04,000 --> 00:21:08,000

Could high levels of pesticide actually be responsible?

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00:21:08,000 --> 00:21:18,000

In March of 2015, Zika is officially detected in Brazil, and by 2016, the World Health Organization has declared it a public health emergency.

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00:21:18,000 --> 00:21:23,000

The Zika virus is transmitted by mosquito bites.

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00:21:23,000 --> 00:21:26,000

Countries are spraying for mosquitoes like crazy.

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00:21:26,000 --> 00:21:30,000

Tropical and semi-tropical places like Cuba are using vast quantities of temaphose.

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00:21:30,000 --> 00:21:33,000

And the timing seems to fit.

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00:21:33,000 --> 00:21:38,000

Cuba reports its first outbreak of the Zika virus in March of 2016.

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00:21:38,000 --> 00:21:43,000

The first American diplomats report symptoms of the Havana syndrome about six months later.

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00:21:43,000 --> 00:21:56,000

Canadian records confirm that in 2017, the Canadian Embassy and its grounds increased the use of temaphose pesticides, which roughly coincides with symptoms in their embassy workers.

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00:21:56,000 --> 00:22:04,000

In fact, the EPA has actually outlawed temaphose to the residential pesticide because of its neurological effects.

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00:22:04,000 --> 00:22:08,000

But not everyone's convinced Friedman's solved the mystery.

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00:22:08,000 --> 00:22:13,000

Temaphose was being used all over the place throughout the Americas, not just at diplomatic residences.

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00:22:13,000 --> 00:22:19,000

It was in Cuban government offices, Cuban homes, and dozens of other places where Havana syndrome didn't occur.

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00:22:19,000 --> 00:22:22,000

What about Brazil? What about Colombia?

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00:22:22,000 --> 00:22:27,000

If temaphose caused this illness, you'd have seen it affect a much larger group worldwide.

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00:22:27,000 --> 00:22:32,000

Regardless, Dr. Friedman still believes a chemical could be the cause.

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00:22:32,000 --> 00:22:37,000

This doesn't mean that it couldn't be a neurological agent of some kind at play.

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00:22:37,000 --> 00:22:39,000

Friedman couldn't test for everything.

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00:22:39,000 --> 00:22:46,000

He tested for a handful of likely candidates, and it's possible that there was something else at play that he didn't test for.

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00:22:46,000 --> 00:22:51,000

In the end, we can't rule out that the Havana syndrome may have been caused by chemical exposure.

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00:22:51,000 --> 00:22:54,000

Is there another chemical weapon out there that we don't yet know about?

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00:22:54,000 --> 00:22:57,000

Hopefully not, but maybe.

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00:23:00,000 --> 00:23:06,000

As growing fears about the mysterious Havana syndrome threaten relations between the U.S. and Cuba,

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00:23:06,000 --> 00:23:10,000

the Cuban government launches its own investigation.

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00:23:10,000 --> 00:23:19,000

In 2018, Cuba's officials announced their findings and identify a surprising new culprit.

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00:23:20,000 --> 00:23:25,000

From very early on, the United States has believed that Cuba is behind Havana syndrome somehow.

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00:23:25,000 --> 00:23:29,000

I mean, you give it that name, the president goes on live television to blame the Cubans.

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00:23:29,000 --> 00:23:31,000

This is a very bad look for them.

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00:23:31,000 --> 00:23:37,000

Some in the White House are actually calling this an act of war, so the Cubans are very anxious to clear their name.

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00:23:37,000 --> 00:23:42,000

The Cuban government interviews about 300 neighbors of these diplomats.

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00:23:42,000 --> 00:23:50,000

They say that they've gone to the living quarters of embassy staffers, that they've analyzed air and oil samples,

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00:23:50,000 --> 00:23:57,000

and that they've conducted dozens of medical examinations to see if people in the surrounding area were afflicted,

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00:23:57,000 --> 00:23:59,000

and they say they find nothing.

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00:23:59,000 --> 00:24:05,000

The Cubans are saying there's simply no known form of energy that can selectively damage the brain the way the doctors describe.

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00:24:05,000 --> 00:24:08,000

They're even doubtful that there's a syndrome at all.

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00:24:08,000 --> 00:24:15,000

Instead, they offer an alternative explanation for both the sounds and the symptoms.

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00:24:15,000 --> 00:24:20,000

The Cuban government, in their report, theorized that this was not caused by sonic weapons,

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00:24:20,000 --> 00:24:23,000

and the chirping noise heard by everyone was crickets.

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00:24:23,000 --> 00:24:27,000

The rest of the symptoms, the Cuban government says, could be caused by stress.

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00:24:31,000 --> 00:24:36,000

After all the hours investigating, evacuating diplomats, conducting extensive medical tests,

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00:24:36,000 --> 00:24:42,000

to suggest that maybe people were just worn down by the sound of crickets, that feels like an insult.

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00:24:42,000 --> 00:24:53,000

Two biologists, UC Berkeley's Alexander Stubbs and the University of Lincoln's Fernando Monte Alegre Zapata, research Cuba's claim.

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00:24:53,000 --> 00:24:58,000

To them, that metallic chirping noise recorded in Havana sounds vaguely familiar.

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00:24:58,000 --> 00:25:04,000

These biologists had a massive database of the sounds of different kinds of insects, their mating calls.

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00:25:04,000 --> 00:25:15,000

And what the biologists found is that the sounds that were recorded in Havana matched precisely that of one particular kind of insect, the Indies Cricket.

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00:25:15,000 --> 00:25:20,000

And moreover, this particular Indies Cricket is resident in Cuba.

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00:25:20,000 --> 00:25:24,000

For confirmation, they use state-of-the-art audio technology.

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00:25:24,000 --> 00:25:29,000

Forensic audio analysis can be incredibly specific these days.

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00:25:29,000 --> 00:25:35,000

Sound wave patterns can be kind of like fingerprints. They can even be used to convict killers.

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00:25:35,000 --> 00:25:45,000

So what's interesting is that when you apply some of these acoustic forensic techniques to what was recorded in Cuba, it's an exact match of the Cricket mating call.

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00:25:45,000 --> 00:25:54,000

Obviously, crickets aren't as menacing as a sonic weapon or a deadly neurotoxin, but this isn't your garden variety cricket.

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00:25:54,000 --> 00:26:00,000

The Indies Cricket can chirp at 100 decibels, the same volume as a subway train.

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00:26:00,000 --> 00:26:08,000

You can imagine that if you had a couple in your residence, that could be a really rough night, especially if you're not habituated to those sounds.

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00:26:08,000 --> 00:26:14,000

If you're from another country, and this is the first time you've ever heard it, that could be extremely disruptive.

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00:26:14,000 --> 00:26:23,000

According to the Cuban report, the crickets may be magnifying stress that the diplomats are already experiencing.

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00:26:23,000 --> 00:26:28,000

The Havana syndrome has some classic telltale signs of psychogenic illnesses.

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00:26:28,000 --> 00:26:35,000

There are studies that show that people who have been exposed to long-term stress have similar brain scans as the Havana victims.

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00:26:35,000 --> 00:26:41,000

That stress might be self-perpetuating. After the news of a possible weapon hits the media, the diplomats are put on alert.

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00:26:41,000 --> 00:26:49,000

They're told that someone could be watching them at home. They're told not to sleep or to stand near their windows and to report any strange symptoms.

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00:26:49,000 --> 00:26:52,000

They're afraid for their families. They could never feel safe.

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00:26:52,000 --> 00:26:57,000

But those suffering from Havana syndrome strongly disagree.

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00:26:57,000 --> 00:27:05,000

Several people got sick before there was an alert, before it reached headlines, and people went into panic mode.

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00:27:05,000 --> 00:27:13,000

The first four cases were CIA officers. These are people who are trained to deal with massive amounts of stress.

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00:27:13,000 --> 00:27:21,000

With opinions split over the cricket theory, the U.S. government calls in an elite scientific team

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00:27:21,000 --> 00:27:23,000

to conduct its own analysis.

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00:27:23,000 --> 00:27:28,000

The federal government has a semi-secret advisory board known as Jason.

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00:27:28,000 --> 00:27:34,000

It was originally called Project Sunrise and was later changed to the name Jason from Greek mythology.

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00:27:34,000 --> 00:27:39,000

It was formed in the aftermath of the Soviet Sputnik launch in 1960.

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00:27:39,000 --> 00:27:45,000

Jason attracts the nation's most elite scientists to advise on defense matters.

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00:27:45,000 --> 00:27:55,000

Kind of like what we saw in World War II with the Manhattan Project, when Einstein and Oppenheimer were researching nuclear energy and weapons.

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00:27:55,000 --> 00:28:03,000

Today, there are between 30 and 60 of our country's best scientists involved in Jason, and they're only activated when there's a particularly difficult task at hand.

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00:28:03,000 --> 00:28:11,000

And at this point, the U.S. government sees Havana syndrome as such a difficult matter that then they turn to Jason.

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00:28:11,000 --> 00:28:17,000

Through a Freedom of Information Act request, Jason's Top Secret 2018 report is released to the public.

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00:28:17,000 --> 00:28:23,000

And while much of it is redacted, the Jason scientists concur that the noises on the Havana recordings are crickets.

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00:28:23,000 --> 00:28:29,000

While they agree on the source of the sound, they don't agree on the source of the illness.

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00:28:29,000 --> 00:28:32,000

The report goes on to say, quote,

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00:28:33,000 --> 00:28:48,000

It cannot be ruled out that the perceived sounds, while not harmful, are introduced by an adversary as deception so as to mask an entirely unrelated mode of causing illness in diplomatic personnel.

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00:28:48,000 --> 00:28:55,000

Basically, they're saying these crickets could be a distraction to hide another form of attack.

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00:28:55,000 --> 00:29:00,000

And suddenly, the Cubans blaming the crickets seems really convenient.

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00:29:00,000 --> 00:29:02,000

Maybe the Cubans are involved, maybe not.

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00:29:02,000 --> 00:29:07,000

Either way, once again, we're left with no idea what's making our people sick.

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00:29:10,000 --> 00:29:15,000

December 2017, Moscow, Russia.

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00:29:15,000 --> 00:29:23,000

CIA operative Mark Polymeropoulos is asleep in his hotel room when he is awakened by a strange sound.

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00:29:23,000 --> 00:29:28,000

In the middle of the night, I woke up when the room was spinning. I had a terrible case of vertigo.

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00:29:28,000 --> 00:29:33,000

I couldn't get up. I was falling over. I had tinnitus, which is ringing in my ears.

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00:29:33,000 --> 00:29:41,000

I had a splitting headache in the back of my head. And overall, there was just this incredible feeling of being disoriented. I was frankly terrified.

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00:29:41,000 --> 00:29:46,000

At the time, Mark believes he has a bad case of food poisoning.

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00:29:46,000 --> 00:29:51,000

I've been in Iraq and Afghanistan been shot at a whole bunch of times, but I was flat out scared.

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00:29:51,000 --> 00:29:57,000

A veteran operative. Mark's been posted on covert missions all over the world.

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00:29:57,000 --> 00:30:09,000

I was the deputy chief of operations of the Europe and Eurasia mission center that entailed oversight over all CIA's clandestine operations from Dublin Island to the farthest regions of Russia, which encompasses 11 time zones.

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00:30:09,000 --> 00:30:18,000

So my position at the time was the equivalent of a three-star general. It was a routine trip where I'm talking to my counterparts in the Russian security services.

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00:30:18,000 --> 00:30:22,000

Mark's symptoms subside for a few days.

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00:30:22,000 --> 00:30:27,000

I was eating at a very fancy restaurant in Moscow, and the symptoms came back, particularly the vertigo.

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00:30:27,000 --> 00:30:34,000

I remember clearly that the room started spinning again. The headaches came back even more severe, the tinnitus, the ringing in my ears.

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00:30:34,000 --> 00:30:39,000

And I had to get back to my room. And in effect, for the last couple days of my trip, I didn't really do much.

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00:30:39,000 --> 00:30:48,000

The vertigo was so disorienting, and I kind of crawled up the stairs of the airplane to finally make my way back to the United States, hoping that, you know, these symptoms would get better.

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00:30:48,000 --> 00:30:52,000

As time goes by, however, his symptoms only get worse.

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00:30:52,000 --> 00:31:00,000

I proceeded to go to multiple doctors, and these included allergists, infectious disease specialists, multiple neurologists, pain doctors.

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00:31:00,000 --> 00:31:07,000

And for months and months, they could find no way to alleviate my symptoms, but still, it was a mystery to them what had occurred.

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00:31:07,000 --> 00:31:13,000

One year later, news breaks of a similar illness affecting diplomats in Havana.

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00:31:13,000 --> 00:31:25,000

I still was having these symptoms. I still was feeling incredibly ill. When I heard about what had happened to officers at the U.S. Embassy in Havana, I had actually at the time thought I could have experienced the same thing.

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00:31:28,000 --> 00:31:35,000

Convinced there's a connection, Mark takes his complaint to the CIA's office of medical services.

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00:31:35,000 --> 00:31:45,000

I went and I asked the CIA doctors there to take a look at me, but in about a 10-minute quick interview and exam, they thought I did not look like the U.S. officials who were afflicted by Havana syndrome.

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00:31:45,000 --> 00:31:53,000

But really what was interesting and pretty alarming is that officers that I knew would stop by my office and they'd say, hey, something happened to me.

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00:31:53,000 --> 00:32:00,000

Their symptoms were very similar. They had an event occur, usually in a hotel room. It was the same thing such as vertigo, splitting headaches.

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00:32:01,000 --> 00:32:14,000

Like myself, they were all involved in Russian operations. Unfortunately, there still was a lot of resistance from inside the office of medical services, but really in that timeframe, I started suffering from brain fog and had about several weeks where I lost my long-distance vision.

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00:32:14,000 --> 00:32:21,000

Ultimately, the result of all this, I couldn't perform my duties. And in mid-2019, I made the

decision that I would retire.

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00:32:22,000 --> 00:32:29,000

Polymeropolis believes he may be one of the first to experience Havana syndrome outside of Cuba.

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00:32:29,000 --> 00:32:35,000

In June 2018, nearly a dozen diplomats are evacuated from Guangzhou, China with similar symptoms.

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00:32:35,000 --> 00:32:42,000

Since then, even more possible cases have popped up in Georgia, Poland, Taiwan, Australia, and the list goes on.

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00:32:42,000 --> 00:32:45,000

Colombia, Kyrgyzstan, Uzbekistan, and Austria.

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00:32:45,000 --> 00:32:49,000

Cases have even been reported on American soil.

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00:32:49,000 --> 00:32:56,000

At least two cases of Havana syndrome have been reported in the United States, including one on the south side of the White House.

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00:32:56,000 --> 00:33:02,000

We don't know if these cases are linked. We don't have any idea of the cause, but some doctors have dubbed it the immaculate concussion.

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00:33:03,000 --> 00:33:10,000

Now that Havana syndrome is happening outside of Cuba, it opens up a staggering array of possibilities.

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00:33:10,000 --> 00:33:21,000

It doesn't have to be caused by something developed in Cuba, but it does have to be something small enough to be smuggled into Cuba and into other countries.

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00:33:21,000 --> 00:33:31,000

And I'd say that if these many attacks in various countries are connected, that pretty much rules out the accidental theories like pesticides or poorly calibrated listening devices.

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00:33:31,000 --> 00:33:37,000

It seems more likely that this is originating from a country with more influence than Cuba.

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00:33:37,000 --> 00:33:44,000

I don't think they have the capability to pull off so many incidents in so many countries across

the world.

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00:33:44,000 --> 00:33:48,000

So the question becomes, is there a weapon that could possibly fit the bill?

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00:33:48,000 --> 00:33:58,000

Something small, portable, and in the hands of a government connected enough to global politics to get an advantage from causing that kind of panic.

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00:34:00,000 --> 00:34:10,000

When cases of Havana syndrome start surfacing worldwide in 2018, U.S. officials can't find a definitive cause.

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00:34:10,000 --> 00:34:16,000

But former spies like Mark Polymeropoulos believe they know the source.

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00:34:16,000 --> 00:34:24,000

Obviously I wasn't there in Cuba, but when talking to the victims, it is very similar with what I felt at that hotel in Moscow in 2017.

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00:34:24,000 --> 00:34:30,000

Polymeropoulos thinks he's the victim of a unique deadly weapon.

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00:34:30,000 --> 00:34:36,000

Of course you've heard the word microwave before.

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00:34:36,000 --> 00:34:40,000

Most of us have microwave ovens to heat food.

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00:34:40,000 --> 00:34:46,000

The difference with a microwave weapon is not the fundamental kinds of waves it's producing. They're still microwaves.

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00:34:46,000 --> 00:34:51,000

It's that they're producing them at much, much higher energy.

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00:34:51,000 --> 00:34:54,000

In other words, you've supersized the system.

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00:34:54,000 --> 00:35:04,000

There's a small device on the inside of the microwave that emits tiny, tiny radio frequency signals, and these tiny radio frequency signals heats up molecules.

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00:35:04,000 --> 00:35:11,000

In the case of a microwave weapon, you're not simply heating up a cup of coffee, but you're actually heating up human tissue.

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00:35:11,000 --> 00:35:19,000

A high-powered microwave weapon may explain the symptoms, the nausea, the vertigo, the headaches, even the reported sounds.

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00:35:19,000 --> 00:35:24,000

It can really do a number on the electroneurological functions of the brain.

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00:35:24,000 --> 00:35:31,000

Unlike a sonic weapon, which are very difficult to focus into a narrow area, microwaves are very easy to direct.

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00:35:31,000 --> 00:35:34,000

You point a microwave one way and that's the way it goes.

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00:35:34,000 --> 00:35:38,000

It will not hit the person who's firing it or impact the surrounding neighborhood.

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00:35:38,000 --> 00:35:41,000

Microwave technology has been rapidly advancing recently.

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00:35:41,000 --> 00:35:49,000

Is it possible that a weapon has been developed that can target a single individual, fitness suitcase, and be deployed from a few hundred yards away?

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00:35:49,000 --> 00:35:52,000

Well, the U.S. has already created something pretty close.

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00:35:52,000 --> 00:36:01,000

In 2004, the U.S. Marine Corps commissions the development of a microwave weapon, codenamed Medusa.

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00:36:01,000 --> 00:36:05,000

Medusa, or mob excess deterrent using silent audio.

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00:36:05,000 --> 00:36:15,000

This was basically a non-lethal microwave ray gun that could be channeled at people and it could potentially incapacitate them.

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00:36:15,000 --> 00:36:21,000

These microwaves can stimulate the parts of the inner ear and mimic an actual audio signal.

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00:36:21,000 --> 00:36:26,000

This gets interpreted by the brain as sound. This is what's called the fray effect.

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00:36:26,000 --> 00:36:33,000

Medusa can make you feel like you're hearing different kinds of sounds, even recognizable sounds like voices inside your head.

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00:36:33,000 --> 00:36:40,000

This could be the source of the sounds reported by those experiencing Havana Central.

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00:36:40,000 --> 00:36:47,000

Although the U.S. has been toying with these weapons for about 20 years, we know of another country that has been using them for longer.

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00:36:47,000 --> 00:36:52,000

The Russians deployed a microwave weapon against the U.S. during the Cold War.

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00:36:52,000 --> 00:37:06,000

Starting in 1953 and continuing until 1976, Soviet authorities aim a near constant microwave beam at the U.S. Embassy in Moscow.

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00:37:06,000 --> 00:37:10,000

Their goal was to interfere with communications inside the U.S. Embassy.

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00:37:10,000 --> 00:37:13,000

Intelligence officials called it the Moscow signal.

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00:37:13,000 --> 00:37:19,000

Although they detected it early on during routine checks, American officials kept it quiet.

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00:37:19,000 --> 00:37:26,000

It's only when the American ambassador to Russia, Walter Stossel, threatens to resign in 1975 that members of his staff were informed.

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00:37:26,000 --> 00:37:33,000

The embassy officials get tested and many of them have elevated white blood cell counts.

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00:37:33,000 --> 00:37:39,000

And Walter Stossel, like two of three ambassadors before him, dies of cancer.

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00:37:39,000 --> 00:37:46,000

Stossel had a severe form of leukemia that reportedly caused his eyes to bleed.

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00:37:46,000 --> 00:37:52,000

Over 100 employees filed for damages against the U.S. for exposure to the Moscow signal.

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00:37:52,000 --> 00:37:58,000

But a State Department study found there was no convincing evidence of adverse health effects.

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00:37:58,000 --> 00:38:09,000

Now the lawsuits are dropped and it basically fades from public view until these afflictions, these mysterious cases, arise in Havana.

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00:38:10,000 --> 00:38:16,000

Could Havana Syndrome be the next phase of a decades-old covert operation?

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00:38:16,000 --> 00:38:27,000

In my view, what happened to my colleagues at the U.S. Embassy in Havana, Cuba, and what's happened to myself and some others is absolutely a continuation of what the Soviets were doing to us at the

U.S. Embassy in Moscow.

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00:38:27,000 --> 00:38:35,000

That said, we do have other adversaries. We have the Chinese, we have the Iranians, and it is entirely possible that more than one country is doing it.

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00:38:35,000 --> 00:38:43,000

Polymeropolis isn't the only spy who believes this. There's actually another account that is more shocking than his.

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00:38:43,000 --> 00:38:54,000

In 1996, NSA officer Mike Beck suffers sudden severe fatigue while on assignment in a classified foreign country.

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00:38:54,000 --> 00:39:01,000

This predates Polymeropolis and the Havana Syndrome cases by about 20 years. But Beck and his attorney believe it's all related.

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00:39:01,000 --> 00:39:09,000

Beck cannot reveal what country he was in, but his attorney stated it was a hostile nation that was not China or Cuba.

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00:39:09,000 --> 00:39:20,000

Beck's job was to go to a diplomatic building and make sure that it wasn't being bugged. And while there with his partner, he does find a suspicious device.

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00:39:20,000 --> 00:39:25,000

The very next day, they both get symptoms that are now associated with the Havana Syndrome.

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00:39:25,000 --> 00:39:36,000

Beck fully recovers, but 10 years later, both he and his partner develop the same form of Parkinson's disease.

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00:39:36,000 --> 00:39:44,000

Beck is certain this isn't a coincidence, so he files a claim for workers' compensation, something that people do every day.

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00:39:44,000 --> 00:39:51,000

Only Beck's employer is the NSA, and this claim relies on top secret information.

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00:39:51,000 --> 00:39:59,000

Incredibly, as part of his claim, the NSA actually provides Beck with a declassified document which may finally prove what happened to him.

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00:39:59,000 --> 00:40:02,000

The memo Beck was given states,

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00:40:02,000 --> 00:40:14,000

There is intelligence information from 2012 associating the hostile country to which Mr. Beck traveled in the late 1990s with a high-powered microwave system weapon

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00:40:14,000 --> 00:40:22,000

that may have the ability to weaken, intimidate, or kill an enemy over time, and without leaving evidence.

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00:40:22,000 --> 00:40:24,000

It goes on to say this,

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00:40:24,000 --> 00:40:36,000

Intelligence information indicated this weapon is designed to bathe the target's living quarters and microwaves, causing numerous physical effects, including a damaged nervous system.

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00:40:36,000 --> 00:40:44,000

Is this proof of the Havana Syndrome? Well, no, but it does prove what happened to Beck may be the same thing that happened in Havana.

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00:40:44,000 --> 00:40:48,000

But at the very least, we now have confirmation that such a weapon exists.

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00:40:48,000 --> 00:40:53,000

And if we ever find evidence that that weapon is in Cuba or some other country, it may explain everything.

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00:40:53,000 --> 00:40:57,000

Meanwhile, though we can't say why it's happening, we know this illness is real.

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00:40:57,000 --> 00:41:06,000

And on October 8th, 2021, Congress passes the Havana Act to compensate government officials who have experienced brain injuries as a result of Havana Syndrome.

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00:41:09,000 --> 00:41:16,000

So far, 1,000 people have come forward claiming injuries related to the so-called Havana Syndrome.

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00:41:16,000 --> 00:41:24,000

And while the investigation remains active, no concrete evidence has been found that a U.S. adversary is responsible.

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00:41:24,000 --> 00:41:30,000

I'm Lawrence Fishburne. Thank you for watching History's Greatest Mysteries.