Carbon Monoxide 101: Testing & Prevention With Charon McNabb

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Charon McNabb

0:00

We think if a furnace is still producing heat, then it's working properly. Fact of the matter is, it can start producing carbon monoxide or leaking carbon monoxide into your home long before it stops producing heat. Same with a vehicle or a fireplace.

KS

Kendra Seymour

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Hello everyone, and welcome to *Your Indoor Air* podcast, brought to you by Change the Air Foundation. I'm Kendra Seymour, and today we're diving into a topic that could literally save lives. Do you know that only about 49% of homes in the US have a working carbon monoxide detector? And even if you *do* have one, there's a good chance it's not detecting low-level carbon monoxide exposure—the kind that slowly damages your health without you even realizing it. Now, most CO alarms are designed to warn you only when the levels are high enough to be immediately deadly. But what about those low levels, those that are silently wreaking havoc on your body over time? These exposures are often overlooked, not just by homeowners and renters, but also by doctors and firefighters and even safety experts. The stories you're going to hear today will shock you. What you will learn will help protect you and your family, and maybe even uncover a hidden cause of chronic health symptoms…and maybe even save a life. And as always, we won't just inform you; we're going to give you clear actionable steps so that you can keep your home and your loved ones and your pets safe. To break this all down, I've invited Charon McNabb from the National Carbon Monoxide Awareness Association. Thank you, Charon, so much for being here.

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Charon McNabb

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Absolutely my pleasure, Kendra. Thank you for the invitation.

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Kendra Seymour

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Now, for those who don't know Charon yet, she founded the National Carbon Monoxide Awareness Association in 2015, after struggling with 11 years of chronic CO poisoning from four leaks in her home's appliances and repeatedly receiving misdiagnoses. NCOAA's mission is to initiate a global conversation on the diagnoses, treatment, and prevention of chronic and acute carbon monoxide poisoning by organizing available COP information and driving change to improve diagnostics, detection, treatment, and standards. Additionally, she holds a Bachelor's of Science in Electrical Engineering from Lawrence Technical University. And prior to her work at the NCOAA, she spent 25 years in automotive, focused on new technology development with General Motors, DENSO, and Magna International. She also dealt directly with the National Highway Traffic Safety Association, driving new backup camera regulation that began in 2018. Oh, she also co-founded the Global Advanced Sales & Marketing in 2011 and helps guide manufacturers and inventors through the automotive sales process, driving growth and profitability.

Charon, I know we had the opportunity to connect a while ago through a mutual introduction. And I was immediately so moved by your passion for this topic because I think it's something that is not discussed enough. And so, I want everyone listening, whether you rent or you own, to listen to this episode. This is a big problem, but there are easy solutions and fixes. So, I hope you join, not just, you know, to listen for yourself, but maybe share with a friends or family members who might also benefit from this information. So, Charon, let's jump in. What is carbon monoxide, and how does it get into our homes?

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Charon McNabb

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Great question to start with. Well, carbon monoxide is often called the "silent killer." You can't see it, you can't smell it, you can't taste it, but it is deadly. It's a gas that's generated every time carbon fuel is burned. So, what does that mean? You know, propane, gasoline, wood in your fireplace, or propane in your barbecue, gasoline in your vehicle. And so, each time we burn these fuels, carbon monoxide is generated. And the way that these appliances are designed, they…the venting system carries this dangerous, deadly gas outside the home. It disperses into free air, and you're fine.

However, the problem comes into play when there's a leak in that venting system, or they're not burning properly…the appliances don't burn properly. So, for example, theoretically, if carbon monoxide is generated, it's because there's not enough oxygen to the amount of fuel that's burned. So, if you don't have enough oxygen getting into your furnace, it'll create more carbon monoxide than that appliance is meant to, creating a problem. Which causes, among other things, a cracked heat exchanger or excess moisture, which can cause rust in the appliance, or

can…extra moisture in the air, which could cause mold. And that's when we get into a lot of problems with carbon monoxide.

KS
Kendra Seymour
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Yeah. And I think that's something that most people don't realize, is you probably have multiple appliances in your home, right? Your stove, your water heater, things like that, that can be sources of this. And, you know, these products over time and with age, like, pieces break down. And so, just because something was safe and working properly when you bought it doesn't mean that it's going to stay in that condition. So, it's super important that this is something we're aware of and we're paying attention to. But this is…

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Charon McNabb
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That's great…

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Kendra Seymour
05:50

Oh yeah, go ahead.

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Charon McNabb
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…thanks, Kendra. And so, the way that appliance breaks down is in stages, right? We think if a furnace is still producing heat, then it's working properly. Fact of the matter is, it can start producing carbon monoxide or leaking carbon monoxide into your home long before it stops producing heat. Same with a vehicle or a fireplace.

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Kendra Seymour
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Yeah, that's an that's an important reminder. We tend to only, you know, raise the alarm (so to speak) when it's, like, completely broken. "My heat stopped working! It's the middle of winter!" Or something to…"My stove's no longer working!" But there are these earlier signs that may not be so obvious. But this is a…

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Charon McNabb
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…and that's what makes carbon monoxide so deadly, right?

KS

Kendra Seymour

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Yeah, absolutely. So, we're going to talk about some strategies to address this as we go on with the interview. But before we do, I want to talk about, like, your story. Because it's very personal for you, what happened to you. Can you tell us a little bit about, kind of, what led you to become so passionate about this issue?

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Charon McNabb

06:59

Sure. Well, you read my background. I was an automotive engineer, and I bought what I thought was my dream home, moved my daughters into the home, and shortly thereafter, I started having some health issues. You know, I started having some multitasking issues and coordination issues, a couple of car accidents and a fall from the ladder. And then it turned into seizures and COPD. And then it turned into early onset Alzheimer's. And the entire time, it was just low-level leaks, several level…low-level leaks in my home.

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Kendra Seymour

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I am so sorry that that happened to you. But the fact that your story illustrates, I think, something, a message we want to drive home today. That this isn't just about life and death, which is a very real, immediate thing that can happen from exposure to high levels of carbon monoxide. But these symptoms are something that you could attribute to numerous other conditions. And I imagine in your scenario, it…they weren't…the dots weren't being connected, right? I mean, I think you had said it was 11 years. I know that your story is not unique. I know you talk with people all across the country and the world. What are… can you help us understand, like, how widespread this issue is and how many people it might be impacting?

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Charon McNabb

08:30

Absolutely. The symptoms are so varied; it's really difficult to pinpoint. My daughters had symptoms, but they were different than mine. And so, it's really difficult to correctly diagnose a CO poisoning, specifically long term. But even chronic, deadly carbon monoxide poisoning gets misdiagnosed as a cardiac event or old age or respiratory conditions. So, the numbers that we have are not indicative of the true issue. For example, you know, there are typically about 1200 deaths per year and about 100,000 emergency room visits. But most of those do not incorporate the chronic poisoning like I had and my daughters had, so they are not part of these stats.

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Kendra Seymour

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So, Charon, I think you had a map when we're talking about prevalence of just how common this is. Do you mind sharing that? And for our podcast listeners, I promise Charon will give you, kind of, an audio overview as well of what you're…we're talking about.

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Charon McNabb

09:48

Yeah. We're looking at a map of the US and the CO poisonings that have occurred in the last, say, seven months of the year…of last year, and this January. And Kendra, it's really widespread. It happens in every state. It happens in every location: boats, RVs, homes, hotels, restaurants. And it's all preventable. In the last seven months, we've had 329 poisonings. Now, mind you, these are only the incidences that were reported by media. Mind you, I…my story and my daughters' story was not in any media coverage. I didn't mention that my neighbor, my brother, my sister, my mom had a cracked heat exchanger. None of them were in a media story. So, this is really just the tip of the iceberg.

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Kendra Seymour

10:56

Yeah. And I think we'll try to, maybe, share this image on social media with your permission and linking back to your website. Because if you're listening on podcast, like, what we're looking at are basically just every…highlights from various states. Nineteen injured in Ohio. One dead and two injured in Indiana. Three dead and 18 injured in Illinois. And on and on and on. And so, this is, this is an everywhere problem, to your point.

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Charon McNabb

11:23

Yes, it is. And you know, we haven't really had a chance to talk about building codes, but there are building code—which are laws—in every state that cover whether or not CO alarms or fire alarms are required in particular buildings. And a lot of these states, they have CO alarm requirements, but they're not being enforced. And people aren't informed that they actually need those CO alarms in their homes or in their small business. And sometimes, "Oh, well, I forgot to change the batteries. They're not working." So, carbon monoxide is 100% preventable, but it does take vigilance to make sure it doesn't happen to you and your family. In the UK, they're about 10 years ahead of us in the research, and their stats show perhaps one in six, one in seven people are poisoned. And you know, I've heard over the years that everyone's been poisoned at least once.

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Kendra Seymour

12:36

Yeah. Do you mind…if it's all right, could you share a little bit about what your daughter was experiencing, and what that looked like in a young person, and how that was different from what you were experiencing?

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Charon McNabb

12:46

Sure. So, carbon monoxide typically shows up in symptoms based on your physiological condition. So, your…it affects every organ, but it shows up first in your weakest organ. And I had two daughters. We lived in kind of a large house. And one daughter lived in a separate house with a separate furnace that wasn't leaking, and she experienced less symptoms than the other daughter. She experienced insomnia, some cognitive decline. The other daughter experienced depression, anxiety, also insomnia. And so, those issues are so vague, it's really hard for a doctor put…to put their finger on. And, you know, we need better diagnostics. Not only do we need better protection (CO alarms), but we need better diagnostics.

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Kendra Seymour

13:51

Yeah.

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Charon McNabb

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And the UK is working on CO, and that is their big push this year, is to come up with diagnostics. I believe there's a webinar scheduled for later this month. We hope to put a link in the show note to talk about the great work and…on new diagnostics. And I think that's all going to be all around white blood cells.

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Kendra Seymour

14:16

Yeah, and we'll definitely link…we're going to link to everything, for those listening, in the show notes. So, be sure to check that out. I know too, you would (I think we had talked before that) you mean…at one point, your young daughter, she was, like, running on a treadmill and thought she was having a heart attack. This is a young person; that that is not a normal thing for a young person to experience. And if you're listening and you're coming at this from, maybe, a mold background, you're probably thinking, “Wow, a lot of those symptoms are similar symptoms that I experienced when I was being exposed to mold.” And I…one of the takeaways here, and one of the messages we want to share with you all at Change the Air Foundation, is that you

spend 90% of your time indoors, breathing in air that's potentially bad from your health. And that can be from a variety of exposures. It could be mold *and* low-level CO2. Maybe it's radon. Maybe it's VOCs. So, when we talk about approaching our home health, there are many factors that we want to explore and we want to rule out to keep people safe. I'll give…

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Charon McNabb

15:18

I forgot to…if you don't mind, I just want to add…you know, you mentioned mold, and we all think of mold from water damage, which is true. But we only seem to think about water damage from leaks. We don't tend to think about it from a condensation perspective. However, carbon monoxide generates more moisture than normal. So, if you have mold damage, suspect carbon monoxide. If you have…if you find a carbon monoxide leak, look for mold.

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Kendra Seymour

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Yeah. This is why, when you bring someone in to investigate your home, you are…you're looking for, you're going in with an open mind. And you're looking at the home as a whole, right? I'll give a quick story for those listening. I had a friend a few years ago. I was helping her navigate some mold issues, and we, you know, made sure to have it taken care of safely and effectively. If you're not sure how to do that, you can head on over to ChangeTheAirFoundation.org; lots of resources under our Start Here tab on how to do that. And we were pretty confident that we had found all the areas that were problematic. And most of their symptoms improved, but she's like, "I'm still having…we're still having, like, these occasional migraines, and we're just, we're not all the way there." And I said, "Well, have you ruled out low-level carbon monoxide exposure? It can cause, you know, symptoms similar what you're describing." And she called me back a couple weeks later, and she's like, "You're never going to believe this. You were right. We ended up having a low-level carbon monoxide leak." And as soon as they were able to get that repaired, the migraines went away. And so, it's always important to think about your home as a whole.

So, you kind of started to get into this. But I want to define a couple things and unpacked the symptoms, because there is a difference between acute and chronic exposure. Can you talk to us about the difference for those two terms, and what that looks like in terms of symptoms?

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Charon McNabb

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Acute poisoning is something that we all recognize as your…leaving your car running in the garage, right? And you might not wake up the next morning. It's a single exposure to very high levels. Chronic exposure is much more difficult to pinpoint. It's multiple exposures at lower levels.

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Kendra Seymour

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And I think that's important, and that is one of the areas that I think is definitely a missing piece. If you're part of that 49% of households who have a working CO detector, it's probably not rated for low-level exposures. And we're going to talk about that in just a moment. So, talk to us, then…it can be varied symptoms, like you described and you touched on. But what is the treatment for this? Because I'm sure if people are listening, they're like, "Oh my goodness." Like, what does the future look like for someone who's been impacted by this?

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Charon McNabb

18:05

Yeah, exactly. So, acute poisoning is diagnosed with a carbon monoxide or COHb blood test. And it's treatable with oxygen therapy: either normal level oxygen, a cannula to your nose, or a hyperbaric, where oxygen is pressurized and you're in a chamber. Chronic poisoning: There is no current diagnostic test for chronic, and there's absolutely no agreed-upon treatment plan. I was on a conference call or webinar yesterday with the American College of Medical Toxicologists, and there was widespread…how do I say…concern about oxygen therapy being appropriate treatment, because it- oxygen can also cause toxicity. So, if oxygen is not a viable therapy, then what is? And if there is no therapy, the absolute right thing to do is ensure prevention.

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Kendra Seymour

19:22

Yeah, 100%. So much is true with that last phrase. Prevention is key, right? So, basically, what you're saying is, if I'm being exposed to low levels, there isn't a test that my doctor can give me that can say, "Hey, this is low-level CO exposure." Which is why having your home investigated for this—and we're going to talk about who can do that for you and how—is going to be key. Because you want to remove exposure; ideally, you want to prevent it. So, I do want to talk…because you guys have a really interesting document on pets, our furry friends, who very much feel like family for a lot of people. So, that affects them too. And in many ways, they're smaller, and they are an early warning sign. So, we'll link to the document in our show notes. But can you highlight what this maybe looks like in pets, and share just a bit about that?

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Charon McNabb

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Absolutely. So, like I said, carbon monoxide affects everyone a little differently. The smaller the body size, the more susceptible you are to it. The higher the breathing rate, the more carbon oxy…carbon monoxide you breathe in per moment, the higher the poisoning will be. So, that's true with pets. The smaller they are, like a bird…you know, they called birds…you know, they use

birds in the coal mines to protect the miners from carbon monoxide. So, if the bird fell off his perch, the miners knew to get out quickly.

And so, the same is with our furry friends. It could look…there are many stories where, you know, the Labrador just wasn't acting right; he was very anxious and ran in circles. Or the pet…or the cat kept clawing, trying to get out. And so, one of the first things that's affected is the thyroid. And so, if your pet has thyroid issues, suspect carbon monoxide. And the carbon monoxide can leave lingering effects long after the carbon monoxide is remediated. So, if you have a pet that has been sick, you have family members that have been sick, and you recently changed the hot water heater? You may not be able to pinpoint it to carbon monoxide, but you need to do the research, talk to experts, and find out. Try and piece together your history as best as possible.

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Kendra Seymour

21:57

Yeah. And that's incredibly helpful and, you know, something we want to always be mindful of. And again, we're going to link to that document because it talks specifically about pets and some strategies for what to do if your pets are also exposed. So, one of the things that I…when we talked before, we had mentioned was that this issue isn't just a home issue. It can affect schools and workplaces and cars and the airline industry. So…

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Charon McNabb

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And hotels.

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Kendra Seymour

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…and hotels. Can you talk to us about some of these alternate exposure places?

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Charon McNabb

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Absolutely. Well, you know, think about the most vulnerable places, right? It's daycares. Happy Smiles Daycare in Pennsylvania affected almost 50 teachers and students. If you go to cosafeschools.com, it links to all of the different poisonings in schools and what you should do in order to protect your children.

But what about hotels? There are a number of poisonings that have happened in hotels. One of our board members was traveling abroad to Argentina, and she carries her little CO detector with her wherever she goes. And it went off in the middle of the night, and had it not gone off, she would not be here today. Story after story about hotel and daycares, schools, even prison. In

the recent news, the cafeteria in the prison twice has been shut down for carbon monoxide poisoning.

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Kendra Seymour

23:40

Yeah, this is…it's funny, and that monitor you held up, I believe that is one of the…a professional one, right? Like with OSHA and things like that. There is a…Corbett Lunsford (who we've interviewed before), he tells a story about how he had actually walked in after wearing it all day to meet his wife for dinner at a fancy restaurant in Chicago. And he didn't take it off because he had forgotten, and it started going off. And it turns out there was low-level exposure in the restaurant, and they had to alert the manager, who, I think, had a history of headaches and other health issues. And so, it's incredibly powerful. Now you had mentioned the airline industry, actually, and how…you would not normally think about pilots and flight attendants, and they're in an airplane. How is this impacting them? Is this even possible? So, can you talk to us what's going on there?

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Charon McNabb

24:28

Yeah. So, the Federal Safety Transportation Bureau (you may have heard of them; they've been in the news recently due to the airline crashes that we've seen), they recommended to the FAA twice that every private plane should have CO monitoring. And, you know, the way that the exhaust on a private plane passes by the indoor air conditioning system is pretty unique. And any small, microscopic cracks will allow that exhaust into the cabin of the plane, and it's pressurized. So, carbon monoxide affects you more in pressurized situations. Now, once a plane crashed, how would you possibly know that it was carbon monoxide to…that would have affected it?

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Kendra Seymour

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Yeah. And at those, like, higher levels, or even low levels, it's cognitive issues and things like that. It is a safety issue, yeah, 100%. Now, I know some people listening might…there's always, every so often, like, a tragic story on the news when it comes to cars, right? Somebody starts a car and the garage…doesn't open up the garage, or maybe they do, but it's not ventilating enough. Real quick though, talk to us about car safety and carbon monoxide.

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Charon McNabb

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Oh, this is, this is my jam, right? Automotive engineer. So, we encapsulate a person in the cabin of a vehicle and put a small engine in it, and run the exhaust of that engine right under the

floorboard of the vehicle. But if there's any microscopic cracks in between any of the interior to exterior, it will suck in that exhaust. And your driving carbon monoxide affects your executive function, affects your coordination and response time. Again, if that vehicle was in a crash, how would you know?

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Kendra Seymour
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Yeah, and…

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Charon McNabb
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…how would I be able to investigate it?

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Kendra Seymour
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Now, you had said there are some car companies that actually have CO detection in them. Is that true?

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Charon McNabb
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One. That's Tesla.

KS
Kendra Seymour
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Just one. All right. And…

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Charon McNabb
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…the electric car company.

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Kendra Seymour
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And this has been an actual, like, issue in other cars; they have found this to be an issue. This isn't just something you're talking about as a hypothetical that…

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Charon McNabb

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I know of three vehicle manufacturers that have faced class action lawsuits for brand new vehicles having carbon monoxide leaks. And then I know dozens of families who have lost loved ones because, you know, older vehicles, either driven by teenagers or through rust; you know, especially on the coast, salt water corrodes. And so, you tend to have more carbon monoxide issues in vehicles along, you know, the coastline.

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Kendra Seymour

27:36

So, we've talked a lot about alarms. Now let's get into specifics, because the Consumer Product Safety Commission has said that CO alarms are life safety devices, not injury prevention devices. So, let's talk about the different types of alarms we might have in our home and break down maybe, like, what people are most familiar with—a traditional carbon monoxide detector—versus the ones that are, you know, rated for low-level exposure.

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Charon McNabb

28:03

Absolutely. So, home CO alarms. They're called alarms, not detectors, because they alert at higher levels. They alarm when a certain level is reached. And it's covered by a standard, so every single alarm sold within the US has to perform to this particular standard. This is a Kidde alarm. It performs to that particular standard. And that standard says below 30 parts per million, it is not allowed to alarm for up to 30 days. After 30 days, it can alarm if it's at 30 parts per million consistently for those 30 days. Additionally, this display here is required to say zero unless levels reach above 30 parts per million. Most people don't know that. There was a survey last year that said that 86% of people do not understand that when your display says zero, it could actually be much higher than that.

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Kendra Seymour

29:12

That message is important. Because people then assume, right, I'm not being exposed. I'm only being exposed when the alarm sounds. And you can have…I mean, 30 days, that is a long time to have a lower-level exposure and not be aware. So, is there an alternative so we can have that traditional CO monitor? Should we get one that is designed to pick up those lower-level exposures? What does that look like?

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Charon McNabb

29:41

Absolutely, but let me just explain when these are required to alarm. They're required to alarm with enough time for someone to leave their home with their life. Meaning if they wait much longer, they'll become uncoordinated or confused and not able to escape the building. So, these go off at 70 parts per million. And to put that in a…kind of a frame of reference, the World Health Organization says no more than four parts per million over the course of 24 hours. Now, most of us spend 90% of our time in our home. So, we do spend, you know, 22, you know, hours in our home. And so, four parts per million is really the health guideline. Compare that to, say, a CO monitor that's designed to show you real-time levels. So, this is a…this is called a monitor, and they give you real-time readings in increments of…one part per million.

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Kendra Seymour

30:59

Okay. So, we probably want both types of alarms in our home, correct?

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Charon McNabb

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Theoretically, yeah. I mean, you want a failsafe. You want something to tell you what the actual levels are. And if, for whatever reason, this leaves the home while you're traveling, your pets are still at home being watched, or your kids are being home watched, you still have a failsafe connected to your home.

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Kendra Seymour

31:29

Do you have, like…so how do we find a good brand? Is this one of those things where they're kind of all created equal, or are there definitely some alarms that are better than others? Can you kind of steer our listeners towards some specific brands even, if you're comfortable sharing?

CM

Charon McNabb

31:47

Yeah, absolutely. So, a couple of things. If you look on Amazon, be very wary. There's been a number of off-brands being sold on Amazon that don't work as reliably as you would expect for a life safety device.

KS

Kendra Seymour

32:08

So, when we're looking for a brand, like, it's better to go directly to the company's website and kind of avoid, maybe, some of those knockoffs or ones that maybe aren't…you're not getting exactly what you think you're getting. That tends to be good advice anyways, when shopping on some of those bigger websites.

So, where in the home, though, should these alarms be placed? Is it like one per level, or do I want it, you know, in certain areas? Where would we put them?

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Charon McNabb

32:37

Absolutely. You do want one on every level. You want one near your bedroom, so that when you're sleeping at night…and hopefully everyone is sleeping with their door shut. Because I don't know if everyone knows this, but from a fire safety perspective, it's always, always, always important to keep with…is to sleep with your door shut. But you want to have a CO alarm right next to your bedroom door so you can hear it in the middle of the night. And then you also want one near your garage. If you have an attached garage, make sure you have one right at the entrance to your home.

KS

Kendra Seymour

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Okay, so one on every level, and one near the bedrooms. And you don't want…you want your, you know, one that sounds for immediate danger; leave the home immediately. Don't take the batteries out and go back to bed. But then you want a device that's rated for low level exposure, then too. So, does it matter? Do these go in the ceiling, like my…or are they on the wall? Do they need to be lower to the ground? Displacement matter?

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Charon McNabb

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So, such a good question. Carbon monoxide disperses with air pretty evenly. So, anywhere in the room is fine; just keep it six inches from a corner.

KS

Kendra Seymour

33:55

Okay, good to know. And remember to check those batteries. Make it around the same time, maybe, you do your smoke detector and just go…

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Charon McNabb

34:02

I'm gonna go one further, Kendra. Always, always, always get a 10-year sealed battery. It's cheaper; it's more reliable. A lot of times you don't really feel like getting a ladder out. Or if you have parents, you don't want them up on a ladder.

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Kendra Seymour

34:21

Yeah. So, that is super helpful. That is a device that can be an easy purchase in the grand scheme of things, if it means preventing hospital visits and degrading health and all the debilitating things that has happened to you, Sharon, and to so many people across the country. If I suspect, though, that, "Hey, I think there might be a low-level issue in my home," who do you call? Is that a fire department? You call a plumber? How do you…how does somebody get that investigated?

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Charon McNabb

34:51

Call your local utility company. Most utility companies have an agreement that they will show up to your home and investigate a CO leak within 60 minutes, free of charge. If your utility company doesn't have that program available, call your local fire department. If your CO alarm is going off, get out of the home immediately. Do not open up the windows. Do not investigate. Do not look for CO, because you won't be able to see it. Just get out on your porch or on your neighbor's…in your neighbor's home, call 911 to have Emergency come out. And you do want the Emergency to come out, because these are very high levels, and you want the emergency personnel to check your family's health and well-being before going back in.

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Kendra Seymour

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I can't emphasize that point enough. I had a dear friend, and she called me, and she's like, "Well, at 2am our CO alarm went off, and, you know, we almost were like, 'Let's take the battery out.'" They evacuated, called 911, and they told them that they had stayed in the house overnight, they probably all would have been dead. But so, again, like 911 if it's an immediate issue. But those, like, low-level exposures that maybe require an investigation. What does that look like if it's maybe a tiny crack? Or, like, how do we pinpoint if it's my stove or the water heater? How do they do that?

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Charon McNabb

36:19

Most people can't do that themselves. It's really important to call a trained professional. And we are working to develop CO safety training, because most of our trade professionals have overlooked carbon monoxide safety in their training. And you want someone who carries a electronic monitor. This is called a monitor, but a true HVAC personnel who understands carbon monoxide, who you want in your home investigating, you want them to have something called a combustion analyzer. This combustion analyzer has a probe that they stick into the flue of the appliance to read the mixture of oxygen and carbon monoxide and a couple other things to make sure it's functioning properly. And then they have the knowledge to adjust it so that it's performing optimally—it's not creating carbon monoxide, it's not creating moisture in your home so mold can grow—and they're checking all of the vents to make sure it heads to the outside without getting into your home. So, on our website, we have a link to, I believe, it's nci.org. But this link will allow you to type in your ZIP code and find trade professionals who have gone through CO safety training…have all the equipment and certification so that they can…you can feel assured that you are going to get to the bottom of this issue.

KS

Kendra Seymour

38:07

That is really helpful, and we're all about that at Change the Air Foundation: finding the right people. Because you don't want to call someone who doesn't have that tool you mentioned, who doesn't know what they're doing, and then they kind of are like “Oh, I don't think it's an issue,” and you rule it out, and you continue to be exposed. So, it's all about finding the right people. And we will 100% link to that. And you want to ask that question: do they have that tool? You know, how are they going to assess this in your home so that you know you're getting to the bottom of it the right way.

CM

Charon McNabb

38:33

And if they don't have an electronic sensor, don't let them into your home. No reason to pay them if they don't have an electronic sensor. When I was trying to get to the bottom of my issue, I called and I asked, “Hey, do you have one of these?” And they said, “Oh, well, we have one, but we have four trucks, and I'm not…I can't guarantee that that sensor is going to be on the truck that arrives to your home.” I said, “No, thank you.”

KS

Kendra Seymour

39:02

I mean, that that blows my mind. That's kind of like having a fire truck and being like, “Only one out of four has water on it.” Like…

CM

Charon McNabb

39:09

Thank you, Kendra. What a great analogy.

KS

Kendra Seymour

39:11

That is just mind boggling. And our listeners know, whether it's an IEP, a remediator (in this case, an HVAC person), like, you have to vet these people. And don't just assume that they have a certain body of knowledge, which is why we have great conversations like this. So, I feel like you just gave us, like, a window into how to really approach this safely and strategically. And hopefully, you know, cut out a lot of the distractions and information that's going to, maybe, not be as helpful. So, thank you. I know we're out of time, but if people wanted to learn more about, like, CO or had follow-up questions for you, how can they get into contact with you? Because you have a fantastic website.

CM

Charon McNabb

39:57

Oh, thanks so much. Yeah, we're really excited about the new website, so please go to www.ncoaa.us. And while you're there, take a look at our resources. We have a lot of resources that could be available, you know, interesting for you. And also, sign up for our newsletter, because we always send out interesting tidbits and ways to get involved in and, you know, be part of the solution. Without you, we’re not able to do this work. So, get involved.

KS

Kendra Seymour

40:36

I love that, and we'll link to your website for sure in the show notes. I get your newsletter, and I find it very informative. So, I definitely encourage people to check it out. Thank you, Sharon, so much for being here. Really, it was a pleasure, and I have a feeling…you know, we might be having some follow-up questions of our own, and maybe you'll come back in November for CO Awareness Month and have another conversation with us.

CM

Charon McNabb

40:58

I would love that. I had so much fun, Kendra. Thank you so much for the invitation. I wish you the best of luck, and thank you for all the amazing work that you are doing. Really appreciate it.

KS

Kendra Seymour

41:10

Well, thank you. And for everyone listening, we appreciate you so much. Do me a favor. If you found this interview helpful, head on over to ChangeTheAirFoundation.org, and sign up for our newsletter. Because it really is the best way to get information like this directly to your inbox. Thank you so much. We'll see you next time. Bye-bye.