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<https://reachmd.com/programs/cme/primary-care-for-the-brain-prevention-and-early-detection-of-cognitive-decline/39897/>

Released: 12/26/2025

Valid until: 10/16/2026

Time needed to complete: 60 minutes

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Primary Care for the Brain: Prevention and Early Detection of Cognitive Decline

Announcer:

Welcome to CME on ReachMD. This activity, titled *Primary Care for the Brain: Prevention and Early Detection of Cognitive Decline*, is provided by Clinical Care Options, LLC, in partnership with Practicing Clinicians Exchange, Smart Patients, and Post Acute and Long-Term Care Medical Association. Prior to beginning the activity, please be sure to review the faculty and commercial support disclosure statements, as well as the learning objectives.

Tracey Piparo:

Welcome back, everyone. Thanks for sticking with us. I hope you're having a great afternoon. This is our last presentation, and it's going to be an awesome one. We're talking about *Primary Care for the Brain: Prevention and Early Detection of Cognitive Decline*. We've got amazing faculty here, and I'm pleased to welcome our last speakers for the day. We have Dr. Emily Clark, who's coming to us from Rochester, New York. We have Susan Scanland, who is the CEO and Founder of Dementia Connection in Pennsylvania. And we also have Dr. Anthony Viera, who is coming from Duke University School of Medicine in Durham, North Carolina. Together, they will update us on how primary care HCPs can help patients preserve their brain health based on the latest evidence, as well as provide us with strategies for using patient-centered communication in our practice.

This program is supported by an educational grant from Lilly.

I just want to give you a little bit of time to review those objectives.

And then, of course, we're going to start with a polling question. Remember to hit that submit button once you choose your answer. So how many people 50 to 65 years of age do you provide care for in a typical week? A: 1 to 9; B: 10 to 25; C: 26 to 50; D: 51 to 100; E: greater than 100; or F: Not applicable to me.

Thanks for doing that, guys, and I'm going to introduce Dr. Emily Clark, and looking forward to a great presentation.

Dr. Emily Clark:

Thank you, Tracey, and thanks again everyone for joining us today. We appreciate you sticking around. So my name is Emily Clark. I'm a geriatric psychiatrist and a dementia care specialist from the University of Rochester. My primary roles are in the clinical care and clinical research related to Alzheimer's disease and other dementias. So in other words, I talk about dementia all day, every day, so I'm excited to get the opportunity to kick off this presentation with the importance of brain health as dementia prevention.

So you're not getting too far without another poll question. So everyone kind of log on for this. So with your patients 50 to 65 years of age, how often do you discuss cognitive or memory concerns or dementia prevention slash planning with your patients? The options are never, rarely, sometimes, often, and always. So I'll give you a few moments here.

Okay, let's move on to the next. So we're really getting you guys active. So we've got a pre-test question for you. So you've got a long-time primary care patient who is now 50 years old. They are coming to you to discuss the importance of brain health for the first time. Which of the following would you tell your patient about the benefit of optimizing her brain health before she has symptoms of cognitive decline? Is it: A: It's beneficial when combined with cholinesterase inhibitors for mild cognitive impairment; B: It may have minimal effect

on Alzheimer's disease, depending on her family and genetic history; C: It is most effective once mild cognitive impairment has developed; D: It can delay or reduce the risk of developing dementia when addressed at her age; or E: It reduces the frequency of cognitive screening needed. So again, we'll give you guys a few moments to respond here.

And let's see. Alright, so it looks like most of you chose option D, so let's see if you guys are right.

So anytime I'm giving a presentation about cognition, I like to highlight a few key points. So number one being, dementia is not normal aging. And number two being, not all cognitive change in older adults is dementia. So let's describe a little bit more about what I mean.

So kind of day-to-day for me, someone presents to a dementia care specialist, there's many things that we're looking for when we're doing an evaluation. One of the most basic being, what category does the severity of their symptoms fall into? Because cognitive change in an older adult can fall into any one of these categories here.

So normal aging, what does this look like? With normal aging, commonly, we will see mild, intermittent complaints about memory. For example, someone says they're walking into a room, they're forgetting what they were going in there for. Maybe they notice that they're relying a bit more on their calendar for appointments. They generally know they've got something coming up, but maybe they don't know exactly what time it is, so they reference it here and there, but not anything too concerning, too over the top.

We can also see mild language impairment with individuals as we age that many people will talk about, 'It's on the tip of my tongue. I know the name of that actress. I know what I'm trying to say, I just can't get it out.' When that presents pretty infrequently but it's observable, that can also be an aspect of normal aging.

The other thing to point out is that these individuals will score normal when you're doing a cognitive testing with them, so these are normal range individuals. With mild cognitive impairment, the patient will present with more frequent, persistent complaints about their cognition, and these complaints are a clear deviation from their prior baseline level of performance. So for example, you have a patient who was a salesman, and they're always really kind of prideful at their ability to remember the names of their clients, know details about them, and all of a sudden they're starting to notice they're having a harder time remembering the names. They see someone they know, they can't figure out quite what their name is.

Families can report that individuals are getting a little more repetitive in their questions or their comments. People might also notice that their loved one is a little more likely to miss or completely forget about an appointment or an activity coming up unless they're getting some reminders, or they're consistently checking their calendar like daily to make sure. These individuals still have preserved functional independence though. So these individuals are managing their medications, their finances, they're shopping for themselves, they're driving, but they might notice that some of these tasks are taking longer than they used to, but they're still completing them.

And then we've got dementia. And what distinguishes dementia from these other categories is that the severity of the cognitive impairment becomes so pronounced that the individual is no longer able to complete those instrumental activities of daily living and the activities of daily living. And this is that stage that most people are thinking about when they're kind of conjuring up an image of Alzheimer's disease.

These are individuals who are severely forgetful, like repeating comments or questions within the span of a conversation that you're having with them. These individuals can also have problems with poor problem-solving abilities, poor judgment. You're thinking of those people who are falling victims to these scams on the calls or computers. And these are also the individuals who, in the beginning stages of dementia, they need help with those more instrumental or higher-level activities of daily living. So needing help with reminders for their medications, needing help with somebody putting meals together for them, driving them.

And then as the dementia progresses into the more severe states, we'll eventually see problems with needing help with ADLs like bathing and toileting and feeding.

For the sake of our prevention talk here, it's important to highlight that bright yellow arrow, that while I'm trying to fit somebody into what category are they lining up with, it's also important to remember that just because somebody is falling into one of those first two categories—normal aging or mild cognitive impairment—you still could be dealing with someone who is working towards this impending decline to dementia if modifiable risk factors aren't addressed.

So, when we're thinking of dementia, we're often thinking of Alzheimer's disease, which is fair. Alzheimer's accounts for the vast majority of the cases of dementia here in the U.S. However, we're becoming more and more aware that Alzheimer's in isolation is pretty uncommon, especially the older we're getting and the older we're presenting with our dementia.

At autopsy, we're finding more mixed pathology, so individuals with Alzheimer's disease also presenting with other pathologies like vascular dementias or other things like Alzheimer's and a dementia with Lewy bodies.

The other thing to highlight here is the next largest category in this pie is vascular dementia in terms of the next most common isolated dementia that we're working with.

So why am I bringing this up in a prevention talk? Because the two largest categories here we know we can have an impact on, especially when it's coming to lifestyle modifications and observing kind of cardiovascular, cerebral, vascular risk factors. So we can make a huge dent in the majority of dementia with some of these modifications if we're acting early enough or we're counseling patients.

So let's hit it from another angle here too. So if I haven't convinced you quite yet how important this is, here's another angle. So all of you guys are coming from primary care. You know what we're working with here. We're in trouble; that dementia is already putting a huge stress on our healthcare system, and if we aren't doing anything to try and curve this growth, this is going to cause a systemic health care crisis here in the U.S.

Currently, the Alzheimer's Association projects there's about 7.2 million Americans in the year 2025, now, living with Alzheimer's disease. This is going to almost double by 2060 with the way that things are going now. Partially, this is because that one of the largest age demographics in the U.S., these baby boomers, will all be 65 or older by the year 2030. So that is putting 73.1 million Americans 65 and older by 2030 according to the U.S. Census Bureau. So we're just simply not equipped to handle this volume of older adult patients with our current infrastructure.

And one of those bullet points here again, you guys already know this, that we have a shortage of dementia care specialists, that from a national average, the wait time is about 18 months to get in to see a dementia care specialist. This is even worse in more rural areas where this wait can be 2+ years to get in to see somebody. And if we're going to try to even touch that demand that we have in 2060, we have to more than double the current number of specialists that we have working right now.

Outside of the specialist, the infrastructure itself is not powered to meet this demand. We don't have enough beds in the assisted living facilities and memory care units, which then leads to these individuals then going to the hospitals for these social admits and placement, and again, stressing the healthcare system, putting more money into the healthcare costs, which the Alzheimer's Association projects could be up to \$1 trillion by 2060. So this is huge.

What else are we dealing with? I mean, people are working later into their lives for various reasons, so the children of our patients just are not as readily available to become caregivers for this population. So they're not available. Finding in-home aide support can also be extremely difficult, especially if you're in somewhere that is a little more rural. So really now is a very critical time for us to be doing whatever we can to curve this, because this is it's scary looking at all that.

So how do you make an impact, especially in primary care? So let's look at an example here. So we've got Carlos. He's a 53-year-old, works in technology, married, two kids. You've known him for 15 years. He's coming to you for his annual visit. No major complaints, but he mentions that he's caring for his mother with Alzheimer's disease and things are advancing, and we're getting to the point now where he's looking at getting her placed somewhere or needing in-home help to support her.

This experience has him worried about himself and the potential burden he would be on his wife and children. So he wants to know from you what can he do to reduce his dementia risk? What can he try to prevent or plan for? And so now actually is the perfect time for him to be thinking about this and for you to be having this conversation with him, that things have changed in this space over the last 10 years or so, that we are finding out more and more about Alzheimer's and our perspectives are shifting, that one of the key things we now know is that Alzheimer's pathology can begin in the brain 15–20 years before the onset of the symptoms.

What we see initially is that we can get amyloid pathology starting to accumulate, again here in these cognitively normal states. From there, we start to see tau pathology build up. Then we start to see those structural changes of the neurodegeneration, some neuroinflammation, and then you get those symptoms.

So here is where we want to act. This is the opportunity for that early intervention to try to delay or stave off the progression of this pathology and those symptoms. Hint, hint.

So Dr. Anthony Viera is going to have the juicy information for you guys. He's going to cover all the modifiable risk factors for Alzheimer's disease.

I just wanted to highlight that yes, we know that there are some non-modifiable risk factors, and these can be used to help you kind of better counsel your patients, better identify who's at higher risk. So again, you guys know this, that age is one of the highest risk factors. The older we get, the more likely our risk of Alzheimer's. So much so that by the time we hit 85 and older, about 1 in 3 individuals in the U.S. have Alzheimer's. Women are about twice as likely to develop Alzheimer's as men, especially once age 65 and older.

And then one of the strongest genetic predictive risk factors for late-onset Alzheimer's disease, so older age Alzheimer's disease, is that

ApoE genotype. Now we don't recommend that we're testing for this routinely, but keying into somebody's family history like Carlos could be an indication that somebody is a carrier, that they have a higher genetic risk factor. So again, important things to keep in mind here.

So we're back to that posttest. So here is my test to see, did I succeed in conveying all this information? So that 50-year-old is back. She was asking you about the benefit of optimizing her brain health before the symptoms of cognitive decline. What is your answer? I won't read through all of those, but I'll give you a few moments here to respond.

Alright, and so you guys did an excellent job at the beginning, by the way, so everybody had answered D in the pretest. In the posttest, same thing, 74% of yes. So I'll call that a success. So again, answer is D, that identifying and working on kind of optimizing her brain health now can delay or reduce the risk of developing dementia when we're addressing it now at her age.

So as I mentioned, Dr. Anthony Viera has got all the good information to go over, so I'm going to hand it over to him to discuss the modifiable risk factors for dementia.

Dr. Anthony Viera:

Thanks, Emily. It's great to be with you all this afternoon. I'm Anthony Viera, I'm chair of family medicine at Duke University. I'm also an active family physician. In fact, I had clinic this morning. We have clinic on Saturdays to try to improve access. I'm sure you all know what I'm talking about.

So we have another poll question here for you all. When discussing health and lifestyle interventions with your patients, how often do you mention the potential benefit to brain health or dementia prevention? A: Never; B: Rarely; C: Sometimes; D: Often; or E: Always?

And here's our pretest question, a 53-year-old man comes to the primary care clinic for his annual wellness visit and reports no current health concerns. Of his ongoing health issues, which would you recommend be reevaluated to have the most likely impact in reducing his risk of dementia? A: Asthma controlled with fluticasone salmeterol, which he rarely uses his rescue inhaler; B: History of depression, currently treated with an SSRI, PHQ-9 score of 5; C: LDL cholesterol 120, it was 150 and he is on atorvastatin; D: Overweight, BMI 28, exercises regularly, 30 minutes walking four to five times per week.

Alright, as Emily said, I'm going to talk about the modifiable risk factors for dementia. And the great news which is conveyed on this slide is that nearly half of dementia risk is due to things we can work on. And if you look at the bar on the far right, which breaks down the orange column on the left of that half risk or so, 45% of it, you can see that it's a lot of things we get the chance to work on with our patients in primary care.

Now, there are things in early life and things at the end of life that are not so much related to primary care, or at least healthcare interventions, but have to do with policy and things like that. But look at the middle part, the high LDL cholesterol 7%, depression 3%, traumatic brain injury, physical inactivity, diabetes, smoking, hypertension, obesity, excessive alcohol, social isolation, visual loss, and there are things like air pollution in there as well, but lots of things that we can intervene on.

And one thing I didn't tell you at the beginning is my research has been really on cardiovascular disease prevention. But what's neat about dementia prevention is so many of the risk factors are the same, and that's where we can lean into our patients and say, this is not only for your heart, it's also for your brain.

Couple of studies that we wanted to highlight. One is the FINGER study, which is a Finnish Geriatric Intervention Study to Prevent Cognitive Impairment and Disability. This was a multi-domain lifestyle modification basically, kind of asked, looking at the question, well, what if we intervene on multiple things at once, can we make a difference? This was a 2-year multi-domain lifestyle trial. It had patients 60 to 77 years of age at risk for dementia, so no dementia at baseline. There were 1,260 participants in the study. Their mean Mini Mental Status Exam was 26.8, and they were randomized 1:1 to receive the extra intervention.

That intervention package consisted of nutrition intervention, regular exercise, cognitive training, and management of those vascular risk factors.

And look at the graphs on the right, you can see early on there was a separation between the control group and the intervention group in both executive functioning and processing speed, which persisted at 12 months and got even greater at the 2-year mark. So overall, the findings show that this could modestly improve or maintain cognitive functioning in at-risk older individuals.

Another cool study is called the U.S. POINTER. It's similar to FINGER study and actually based off the protocol. It was a phase 3, single-blind, 2-year, multi-domain study at five sites, again individuals at risk 60 to 79 years of age. There were over 2,100 of them. Mini Mental Status cognitively normal at 29. The range interquartile was 28 to 30. This group also was randomized to receive the extra intervention. Again, protocol adapted from the prior study, but now to a U.S. culture. The interventions consisted of physical exercise, a diet

intervention, cognitive exercise, and health coaching.

And just as before, and this outcome showing on the graph is global cognitive function composite score, but you can see even at half a year post randomization, you're starting to get this separation, which gets wider over the course of the study, and at 1 year is definitely statistically significant and maintains all the way through 1.5 and even at 2 years.

As a hypertension cardiovascular disease researcher, I talk about SPRINT a lot, the one trial that was out of SPRINT was this other trial, the SPRINT MIND trial. This was focused on dementia prevention. They basically randomized, just like SPRINT did, to intensive blood pressure control with a systolic goal of less than 120 or the standard treatment goal at the time, which was systolic BP less than 140. So again, this is an intensive blood pressure control study.

Now with the MIND trial, the outcome is dementia. And so what they looked at here was an outcome of either probable dementia, mild cognitive impairment, or probable dementia or MCI as a combined outcome. The median follow-up was 5.1 years. And as you can see, there was a 17% risk reduction in the intensive treatment group and a 19% risk reduction in the intensive treatment group for mild cognitive impairment. When you combine the two, about a 15% risk reduction, with a confidence interval that's below 1, so all statistically significant at the MCI or the composite outcome.

I use this a lot when I talk with patients around their blood pressure control and and those who want to say, do you want to get even tighter control? Here's the reason we might look at that. And I talk about this study in addition to the cardiovascular, the renal benefits, the heart benefits. I talk about the dementia benefits.

We have a trial called PREVENTABLE, which is basically looking at randomization to a statin, atorvastatin or placebo, on the outcomes of dementia and loss of ADL function. The trial is ongoing. It was initiated during COVID in 2020. It's a large community patient cohort age 75 years or older, with no CVD history or previous statin use. So I'll be looking forward to the results of this.

So back to Carlos. You know when you look at Carlos, he looks pretty healthy. His A1c is 6.0. So his BP, it looks pretty good if you're using the sort of the older standard, 135/85. BMI is a little elevated. Cholesterol while taking atorvastatin is 90. It could be better. His HDL is great. He's too busy to go to the gym, but he walks his dog 10 to 15 minutes every morning and evening. Eats a largely low-fat diet, but he does buy fast food when he forgets to pack lunch. He's never smoked, has around five alcoholic drinks per week, and is sleeping pretty well, although his wife says he sometimes snores.

So as Emily alluded to, dementia is a spectrum, right, and prevention begins early. So these are things we talk about in primary care. It's a great time, middle age, earlier, intervene on things that are cardiovascular risk factors. They also are brain health risk factors. So obviously you want to have the best foundation possible.

There's not much we can do other than taking good care of our pregnant patients for the fetal and childhood development. But as we grow into adulthood, those cardiovascular risk factors, those lifestyle things that we can intervene on, it's one more reason to emphasize to our patients, listen, lifestyle is the key, right? If you can prevent things with lifestyle, you want to do that.

And as Emily pointed out, we're not going to have the resources to deal with the amount of dementia that might be coming our way if we don't do something. So prevention is a really great key, a really great thing to think about for us.

So as primary care clinicians, there's several things we can think about, steps to take. Obviously, we can educate about a brain healthy lifestyle. I've been emphasizing this last 10 minutes or so, that the things we're already doing to take care of our patients for other health reasons are also brain health reasons.

Other pieces of this, decreasing exposure to environmental risk factors. There are things we can do, although there's a lot of things around policy and interventions that are outside the clinic walls, but they still fall within the realm of public health. So we can be advocates for those things.

And then referring to research studies is a great thing to do. People are interested in this topic. And so they want to know, are there research studies around? Can I get involved? They want the cutting edge if they can get to it. And so research studies provide those environments. They provide opportunities for patients. So referring to research is something I always consider.

The World Health Organization in 2022 compiled a list of risk reduction strategies for cognitive decline and dementia, which again includes all the things you know and that you're really already doing. But here we're emphasizing their benefits on cognitive decline and dementia. Physical activity, weight management, hypertension management, dyslipidemia management, nutrition, the Mediterranean-like diet, the DASH diet, two of the most well studied diets for cardiovascular health, also for brain health. Obviously tobacco cessation. I always tell a patient who's smoking, listen, there's some things I can do for your health, but the best thing we can do for your overall health is to get you to quit smoking. Diabetes management, intervention for alcohol use disorder, cognitive intervention and cognitive

training, lots of brain health exercises out there now.

And one thing patients ask about is vitamins. We do know that B and E and polyunsaturated fatty acid supplements, those things are not recommended.

The AHA has a 2021 primary care agenda for brain health. You'll recall back in 2017 AHA identified Life's Simple Seven. Although they're not so simple, but they are important. So this is again emphasizing current smoking, we've got to get patients to quit. Body mass index that's too high, we need to work with our patients to get that down. Patients that are not physically active, we need to work with them. We don't have to go right to the 150 minutes per week, but we can start where they are and add a little bit of steps or whatever it is per week to get them going, make our SMART goals, and work with us to get those accomplished, and then ask about them when they come back. Healthy diet score, again things like the Mediterranean diet, the DASH diet, those kinds of diets are well studied. And if we can get our patients to adopt even parts of them, we get benefit. Keeping that cholesterol low, especially that LDL. Getting that blood pressure down. Getting that blood pressure down to—you could go for less than 120 over less than 80 for some of our patients. It may not be the best for all of our older patients, but if people are doing well and they want to go for it, I will work with them on that. Fasting plasma glucose less than 100, so that's going back to that diabetes control.

Now in 2021, the AHA added six additional factors because they are so important. And these are addressing depression, addressing social isolation, addressing excessive alcohol use, helping our patients get to sleep. Less education obviously is a background and a foundational issue, something that can be intervened on, not necessarily in the clinic, but something we can advocate for. And then of course hearing loss. So when patients are reluctant about their hearing aid, I tell them hearing is so important, and preventing hearing loss helps your brain health. And so that often convinces them to go get that audiogram and then move to the hearing aid.

In terms of conversations with patients, I know it can be hard. We're hesitant to discuss brain health, cognitive concerns. We're really most hesitant to discuss dementia. And patients are hesitant to bring it up, largely because I think it's because they don't feel as much that can be done about it, and they're scared about it. So I use again this opportunity to say, listen, the stuff I'm working on, your blood pressure, your cholesterol, your diabetes, all of that is helping your brain as well. And so that's a way to engage in that conversation.

And then we historically have not had great evidence, but now we have good evidence to guide primary care around these things. And this talk again has been focusing on the lifestyle things. So you'll remember the FINGER study, the U.S. POINTER study, and then the PREVENTABLE study that's coming up. And then just talking about the social and cultural context around brain health and cognition is another thing. So those are all the things that we can do when we talk with our patients.

Alright, to summarize, the key health assessments and interventions. Optimize blood pressure with goals based on comorbidities and symptoms. Check cholesterol levels and treat if indicated. Work with patients to get more aggressive, you know, if they're game for it. Control blood sugar with A1c goals based on comorbidities and life expectancy. Treat depression effectively. Encourage maintenance of healthy weight or getting to healthy weight, if you can help our patients do that. And then if our patient is snoring or having possible sleep apnea, getting that sleep study for them.

Alright, back to our posttest question. This is that 53-year-old patient who comes to the primary care clinic for his annual wellness visit and reports no current health concerns. Of his ongoing health issues, which would you recommend be reevaluated to have the most likely impact in reducing his risk of dementia?

Alright. The correct answer was LDL cholesterol 120, so working on that. The rationale again being that elevated LDL is strongly associated with dementia risk. It's heart risk, it's dementia risk. It's almost like you can remember the same—they tie together, they go hand in hand. Still within at-risk levels and can be improved with treatment. Asthma and depression are well managed. BMI could be improved, but his regular exercise is likely to mitigate that risk.

And now I'm going to turn it over to my colleague, Susan, for the next part on cognitive screening and assessment in routine primary care.

Susan Scanland:

Welcome everyone to the last session of the day. So thank you so much, Emily and Anthony, talking about who's at risk and what we can do to help them prevent the risk of Alzheimer's.

So I'm going to fast forward it a little bit to later in life, as Emily talked about the risk increases as one ages, and more about early detection and why it's so important. So I've been a geriatric nurse practitioner for 42 years. My last 25 years has been spent doing dementia consulting in primary care and in long-term care. And I also, last 25 years, have had my own education company just on Alzheimer's and dementias because I saw the need in the community when I did general geriatrics, on how important it is for all primary care providers to know how to diagnose and treat properly.

So with that, we will go ahead and start with another screening question, another poll question. How do you perform cognitive screening in your very busy schedules on your routine clinic visits in patients that are, you know, late middle age, 50 to 65 years of age? First answer, A: Never; B: Rarely; C: Sometimes; D: Often; and E: Always. Okay, we'll give you some time to answer.

Alright. Here's your pretest. A 65-year-old woman comes to your clinic for her first annual Medicare wellness visit. Now, you do your review of systems, and then she says she's gotten lost driving a couple times and she sometimes forgets where she's going. So how do you, as her PCP, address her concern, you know, during this visit? A: Reassure her that occasional memory lapses could be normal with aging, but order blood biomarkers to confirm; B: Explain that brain health is a part of overall wellness and perform a brief cognitive screen like the Mini-Cog, the MoCA, the Saint Louis University Mental Status, along with lab diagnostics; C: Complete the primary care eval and refer for diagnostic neural imaging, high level, like for example an amyloid PET scan; D: Order standard labs and ApoE4 genetic testing to provide clarity on her risk for dementia.

So pick one of those, whichever you think is that's going to address her concerns with you right now.

Alright, now we're bringing back Carlos. Now, he's aged a bit since our last slide. He's now 78 years old, and he comes into your office with his adult daughter, Maria, there's probably some memory concerns. So we're going to dive into what do we do. You know, here's a patient and the daughter is a little bit concerned that there may be something going on, very vague.

So what we have to do as PCPs is first, you know, you don't want to just throw a Mini Mental State, you know, on the table and say, hey, I want you to fill this out. We want to have a conversation first with the patient and the informant, as we often call them, because it's not always a family member. So have that conversation. Sometimes it works with them together. Often it doesn't. So sometimes you have to send someone, you know, in another room, or for lab tests, to get the true story.

What's the nature of the concerning symptoms? What concerns the informant or the care provider? Then we want to, like I say, we want to be like dementia detectives. We want to explore, when did this begin? What was the onset? What was going on at the time? And how frequently were symptoms when it started, say two or three years ago, which is probably about the average time it takes to realize there's a problem and present to all of you? What's been the tempo? Is it always, you know, kind of the same level of severity, or does it change? Does it get worse with certain things, or, you know, a little bit easier over time?

Then look at the relationship between events and symptoms. And the one you often see in primary care, I'm sure, is death of a spouse. Did that trigger depression? Did that trigger, you know, all of a sudden cognitive impairment?

Another thing I have often seen, you know, in primary care is when someone is taking care of a loved one, and then that person passes away or goes to an acute care setting. All of a sudden, you realize how the person with the memory loss is not functioning. We call that the preserved dyad, when the other partner picks up, you know, the deficits by their loved one.

So we also want to look at— looking at the impact of all these symptoms that, say, Maria is reporting on what I call the ABCs of Alzheimer's, ADL, behaviors, and cognition. We'll talk about that in a minute. Also, what's going on with the interpersonal relationships? This can be incredibly stressful on a marriage or significant other relationship. You know, I remember two older sisters, one getting very, very upset and not talking to her sister because she was no longer helping with the dishes, but she had, you know, once again, cognitive impairment. So a lot of times relationships and family relationships can, you know, sever during this process. We want to be aware of that.

Safety is often underrecognized and is a huge risk factor for public health, especially the driving. We want to assess that right up front. What's the living situation? Is it safe for them to be on their own? Sometimes folks are still living in their home and they're starting to wander out, eloping, or there are falls. What about medication errors? If they're forgetful, good chance they could be underdosing, overdosing, or not taking their meds at all. Has this person been exploited? We know about the tremendous surge in internet schemes and financial issues happening to older persons, and sometimes they lose, you know, a lot of money. Are neighbors or family members concerned about their driving? Do the neighbors tell their kids to run in the backyard, you know, when Carlos is pulling his car out of the driveway? So very important to assess all of those factors.

Zooming in on the ABCs, let's start with the A, ADLs. Maria says Carlos was actually quite handy before, and now he's having a hard time doing his tasks, you know, the handyman fixing things, the windows, the doors, when something would break. Carlos ran out of his gas three times in his car, and he's less attentive. She notices when she's in the car with him, the GPS is on, but he's not getting signals in time to, you know, make that turn.

Behaviors often is an under-looked symptom, and it can occur as early as mild cognitive impairment. Apathy is very common early on in MCI. Irritability, argumentative, also anxiety. We see a lot of anxiety, you know, often just occurring on its own when there was no history of anxiety before. And then you also have coupled on top of that the anxiety of realizing that, hey, there's something wrong with me. I'm

starting to become more forgetful, and trying to cover that up causes more anxiety. So that's the As and the Bs.

This is cognition for C. Carlos is no longer remembering friends that he knew, you know, maybe 3 years ago, and also his own kids' names he's starting to forget, Maria's siblings. He was always quite good, being of course, he was in IT. He was sending emails and texts and knew how to help other folks with their computers, but now he's getting stuck doing the simple process of, you know, communicating emails and text-wise.

So what do we do? And I'm sure all of you have heard about the importance of ruling out delirium, you know, the reversible cause of confusion. And you know, we all know how to do that, you know, ruling out infections and anticholinergic meds and so forth. You know, we want to be aware of what causes problems from a cholinergic standpoint.

What about medications? PIMs, as we call them, potentially inappropriate medications on the Beers Criteria, hypnotics, you know, the sedatives, all the anticholinergic meds. And like I said, you know, we have to be super concerned, especially if they're not taking their meds correctly.

Depression, very often I've seen, especially in long-term care and assisted living patients over the years, depression and dementia can coexist. So you always want to look for depression even in the presence of dementia. And I know the Geriatric Depression Scale is good until maybe the Mini Mental State is about 15. Once you get below that, run a Cornell Scale for Depression and Dementia, which is quite quick and easily done in a PCP visit. Rule out other psych conditions like bipolar or schizophrenia, or, you know, addiction concerns, which are certainly, you know, showing up now with our baby boomers.

So you're busy folks. I know sometimes you have 20 minutes, some clinics have 15-minute visits. I hope it doesn't get less than that. But anyway, you want something really fast on this visit with Carlos, and you can't do a whole, you know, 10-minute exam. Do the Mini-Cog, because the Mini-Cog is a rapid screen done in three minutes. You basically give the patient three words, have them repeat it, draw a clock. Okay, you know, the clock is worth 2 points, and then you ask them to repeat the three words, you know, and that's the other 3 points. So if they get greater than 3, probably a lower risk of dementia. This is not diagnostic by any means, nor are the MoCA, the Montreal Cognitive Assessment, or the Mini Mental State Exam.

And there's another one that I used, you know, quite frequently, the SLUMS, the Saint Louis University Mental Status. So below we have a table, and this is just looking at the terms cognitive impairment and dementia as listed for the SLUMS.

But you know, you could see with all three of these tests, normal is, you know, mid 20s up to 30. They're all scored up to 30.

Okay, mild cognitive impairment on the MoCA, and probably, you know, the beginning, you know, early mild dementia itself, runs between 18 on the dementia side and 25 on the MCI side for the MoCA. The SLUMS, 21 to 30. And the MMSE, 19 to 23 would be mild dementia.

When you get down to the moderate stage, and we know that's 10 to 18, as we're all familiar with the MMSE, and on the MoCA that would be 10 to 17.

And the other way, because, you know, when we started prescribing, you know, memantine, for example, we would say, okay, you start that when they hit the moderate stages. So when is that clinically? That's when they go from having difficulty with their higher level of ADLs, their instrumental activities of daily living, and moderate hits when they're losing those basic ADLs, the bathing, the dressing, the toileting. So that's when we would start memantine. So it was kind of helpful with the MMSE to guide us with that. Severe, less than 10.

Okay. I was fortunate to work on the Alzheimer's Association Clinical Practice Guideline Committee that came up with the first detection guidelines and diagnostic testing. And actually decades myself and Carolyn Clevenger, another nurse practitioner, worked with experts—memory experts around the country. And this was to help guide all of you to diagnose properly and not have to wait 18 months, as we mentioned earlier in the program, to get a diagnosis.

So what do you do as PCPs? Let's look at tier 1 and tier 2, or in your job description. Okay, tier 1 basic testing. And this was based on, you know, hundreds and thousands of studies, what the experts were recommending. Blood tests, TSH, B12, homocysteine, CBC, metabolic, sed rate, and CRP. Imaging, very important to rule out all those other reversible causes or strokes. Brain MRI without contrast, and only use the CT if they can't have an MRI from, you know, whatever pacemakers or claustrophobia. We want to screen for and rule out other things that can show up in the brain and other causes of reversible, you know, or treatable conditions, hypothyroidism, etc.

Tier 2 is your job also, targeted testing. And this is based on your patient's clinical profile. What illnesses do they have? If they have diabetes, A1c. You know, arthritis, you know, rheumatoid arthritis, ANA. Hyperlipidemia, lipids. So once again, this is in your realm. You don't wait for the cognitive neurologist to do this.

Chest x-ray for smokers. UA for persons with kidney disease and UTIs. Sleep study, very, very important, because sleep OSA is a risk factor for both vascular and Alzheimer's disease, very under diagnosed, and people think it's normal to snore. They should always be worked up for that.

Now, when you send folks to a memory center, that's where often they take tier 3 or tier 4 testing to the next level. Who do you refer out? Okay, first of all, you refer people who are interested in the new beta amyloid IV treatments. Second, you refer out anybody under the age of 65. And third, if this is an atypical presentation and it doesn't look like your classic Alzheimer's or your classic Lewy body or frontotemporal dementia, those folks are a rapid progressing dementia too. Those folks should be referred to a cognitive neurologist, geriatric psychiatrist, or memory center. Very important. Don't just, like, let it go.

Okay. And they would do the biomarkers and the advanced imaging, the FDG PET to, you know, help differentiate FTD versus Alzheimer's disease, and an amyloid PET, you know, lumbar punctures, and so forth, to help make decisions. And genetic testing, you know, what's their risk, what's their risk for any potential complications if we go with the beta amyloid treatments, and advanced CSF studies.

And there's emerging biomarkers, and one was FDA approved in May, and we're going to be seeing more of those coming out for both amyloid and tau.

Very exciting time. We're finally getting some, you know, ways to easily diagnose this. It's been tough for many years. I've been in this field, did my thesis on this 40 years ago. So it's nice to see things finally happening.

Alright. Carlos. What is MRI showing? Medial temporal lobe atrophy, including the hippocampus where all the disease seems to begin, diffuse cortical atrophy in both the parietal and temporal lobes, which is also typical of Alzheimer's. So based on what we have as PCPs, we can give him a diagnosis of amnestic MCI due to probable Alzheimer's disease. You don't say definite until they have the definite biomarkers or the, you know, as far as, you know, proof of amyloid, you know, with the CSF testing, or the amyloid PET.

So what do the patients want to do? What does the family want to do? They know somebody who's doing pretty well on amyloid beta infusion, and they're interested.

However, I think, as Emily mentioned, you have to wait a long time. They're pretty lucky, it's only a 9-month wait, 60 miles away and 90 miles away. So what I advise people, is that, you know, get on the waiting list for both and tell them you would be very happy to take a cancellation and, you know, run at the last minute, because it is so tough. And as was mentioned before, we need so many people. If you see people in high school and they don't know what they want to do, just whisper dementia, Alzheimer's, geriatric, psychiatry, neurology, and you will be taking care of ourselves as we get older.

Alright, as a PCP, what do you do now? Okay, we know. And the reason we're really upping early diagnosis—and I'm glad our guidelines came out in time for this—beta amyloid antibodies, you could only treat them, they're only FDA approved for MCI due to Alzheimer's disease or mild dementia due to Alzheimer's. If you hit the moderate stage, you hit that magic 19 on the MMSE, it's already too late.

When does the average person present to you? Usually about 2.5 years after symptoms begin. That's why the whole brain health discussion that Anthony and Emily talked about before, 20 years before, 15 years before, 10, 5 years before, is so important, because this way you can catch it early on when they're eligible to have this medication that can hold them for a while. It's not approved for any other type of MCI or dementia, like MCI of Lewy body or vascular dementia. It's only FDA approved for Alzheimer's.

What else? And please do not forget this, because this has been my Bible teaching for the last 20 years. Treat with combination therapy. So important. And having worked in long-term care, I found for sure, used in combination therapy, cholinesterase inhibitors and memantine does slow down the process and pushes back the onset of behavioral symptoms and functional decline. I've seen that with family members, many, many patients. I do swear by it. It does work, not for everybody, but a good percentage. So please, please, please, as soon as you finish that workup and do what you have to do, at the time you send the consult to the cognitive neurologists, please, please, please start cholinesterase inhibitors. Maximize them to the point where, you know, they can tolerate them. So I know galantamine has a new formula coming out that bypasses the side effects, GI side effects. So you may want to look into that.

Retest cognitive assessment on each visit, okay, you know while, you're waiting for the specialist. And watch for when they slip from going from mild to moderate. At that point, you want to jump in and get the memantine started too. Do not wait for a neurologist or cognitive specialist, especially if you're waiting 1.5 to 2 years. They're going to lose more function in that time period. So keep that in mind.

Now, we're treating the whole family. We're not just treating the brain. Please treat the family members. I have seen so many spouses

die before the patient even gets to the later stages of Alzheimer's just because of the stress. You want to be sure you're doing caregiver education, how to prevent depression, burnout, planning, support, because they try to do it themselves. They try to be the heroine or the hero of their loved one, to show everyone that they do care. And that's just not healthy. You've got to get them started early. Get them going to the Alzheimer's Association for the 24-hour hotline, support groups.

Safety so important all the way through. My gosh, I've had patients who would escape their homes and end up, you know, in their underwear with bathrobes going down, you know, the side of the highway. So you know, you've got to address these situations before they become disasters or, you know, unfortunate events. Supervision, nutrition, fall risk, medication safety, planning. The earlier you start to plan, they can get their estate and their wills in line. Living wills, POAs, financial. Many of these folks are still working. You know, I've had patients who were lawyers still in practice, and they were already well into the moderate stages. So don't wait. Don't wait.

And if there's any doubt, neuropsych testing is really helpful for professionals that are still working, and that can be just, you know, it can guide them and the family and make it easier with what's really going on.

So what's our takeaways? How can we help them? Be proactive. Share your resources with your patients. And as Anthony beautifully outlined, those risk factors continue even after diagnosis, because they've shown in a lot of studies, if you don't keep up with the cardiovascular risk factors, their dementia can progress more quickly. Build that rapport, build that trust.

I also wanted to share with you, there's a really nice brain health community. Now, this is not monitored by healthcare professionals, but it's a nice, you know, meeting place for family members, for patients, no ads. These conversations are private, and there is somebody monitoring them for inappropriate content. It's a national network. So these caregivers don't have to feel so alone, nor do the patients. I have seen over the years LinkedIn groups for early Alzheimer's. But you know, get them involved in something so they're not going to feel so isolated.

Alright, here's our posttest. A 65-year-old woman comes to the clinic. Okay, she's gotten lost driving a few times. So what are we going to do? Yes, you did this before. A: Reassure her occasional memory lapses could be normal, but order the blood biomarkers; explain to her this is part of wellness, and do those brief cognitive screens like we talked about, the Mini-Cog, MoCA, or SLUMS; complete your evaluation and refer for an amyloid PET scan; or order your standard labs and the genetic testing to clarify her risk. So with that, we'll let you choose A, B, C, or D.

Beautiful. This is fantastic. So 90% of you pretty much gave the right answer. Brain health is a part of overall wellness, and you do the right thing as PCPs, getting the Mini-Cog, MoCA, or SLUMS, and then like I said, the tier 1 or tier 2 testing.

You know, this is what we do. Fabulous, okay. And yeah, you're pretty much consistent with what you answered before. So I'm dealing with a bright audience here, and it's great you've been on board with this. So alright.

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