EPISODE NAME: Understanding and Diagnosing Alzheimer’s disease

Good afternoon and thanks for joining us, I am Judy Simpson. As our society grows older the number of people inflicted with Alzheimer’s Disease is also growing. Awareness of the disease is one of the first steps in fighting it. Since November is Alzheimer’s Awareness Month, this afternoon we put the spotlight on the disease. As part of our ongoing partnership with University of Vermont’s Center on Aging our guest is Dr. Bill Pendlebury. Dr. Pendlebury is the Director of the Center on Aging and a professor of pathology and neurology at the University of Vermont’s College of Medicine. Always great to have you with us.

Dr. Pendlebury.: Thank you Judy.

Judy.: Let’s talk about addressing dementia. What it is and perhaps most importantly what it is not.

Dr. Pendlebury.: I think to put it into proper context all of us experience memory loss as we get older it generally starts at the age of 40 and that kind of memory problem doesn’t have any impact whatsoever on day to day functioning. It’s annoying but not a big deal whereas dementia is a memory loss problem typically associated with other thinking or problems that do lead to a negative impact on day to day functioning so it really interferes with our independence and ultimately our safety.

Judy.: You gave me an example earlier on the differences are and what normal memory loss is vs. dementia.

Dr. Pendlebury.: It wouldn’t be surprising to wake up in the morning and forget where you put your keys to the car and you might find them in the coat pocket of the coat you wore the day before but it would be unusual to find the keys in the refrigerator or freezer. That would be something that would raise some concern.

Judy.: Why are we so concerned about dementia as a health problem?

Dr. Pendlebury.: It really has to do with the demographics of the United States and for that matter throughout the world. There will be a visual there’s the visual on the screen now that shows that we are an aging population. As you can see on the screen we’ve gone from about 25,000,000 people over the age of 65 in the year 1980 to a projected increase up to 70,000,000
people over the age of 65 by the year 2040 and that's a group of people who are at highest risk for developing dementia.

Judy.: How are dementia and Alzheimer's Disease related?

Dr. Pendlebury.: What we need to do is think about dementia as a symptom sort of like a runny nose is a symptom and what's the most common cause of a runny nose is typically a cold so dementia is a symptom of memory loss and other problems of cognitive abilities and by far the most common cause of dementia in people over the age of 65 is Alzheimer's Disease which is the degenerative disease of the brain with pathologic findings that we will talk about later and when you go to see a doctor or other healthcare provider about the symptoms of dementia it's the obligation of the healthcare system to find out what's causing the problem.

Judy.: Does it always mean Alzheimer's Disease?

Dr. Pendlebury.: It doesn't always mean Alzheimer's Disease. Dementia can be due to a large variety of medical conditions including many of which are reversible and completely treatable. That's one of the reasons in fact the most important reason why it's critical to have a careful evaluation when symptoms of dementia are present.

Judy.: What are some of the facts and figures related to Alzheimer's Disease?

Dr. Pendlebury.: This is a major public health policy issue or problem in the United States. They'll be a slide coming up which will show some of these facts and figures. We now estimate there's over five million people actually 5 1/2 million people who have Alzheimer's Disease as many as 10% of people over the age 65. It's a very expensive disease to care for. Many patients with Alzheimer's Disease spend the latter part of their life in a nursing home and in Chittenden County nursing home costs are 80 to 90,000 dollars a year the disease goes on for 7 to 10 years. It has major impact on family members it's a very expensive disease actually the third most expensive disease after heart disease and cancer in terms of healthcare dollars. I think a lot of people are surprised to find out that Alzheimer's Disease is the fourth leading cause of death in people over the age of 65.

Judy.: That is surprising. So what have we learned about AD in the past 25 years?

Dr. Pendlebury.: What we've learned is that the pathologic changes of -- and actually there's one more slide here that I want to talk about a little bit before we get into that. This is information from a four year span between 2002 thousand four which shows a declining death rate from heart disease and stroke high as opposed to an increasing death rate from Alzheimer's Disease. I think this is a reflection of the fact that we've done a great job and treating illnesses like high blood pressure high cholesterol and diabetes which has reduced the risk of stroke heart disease whereas risk factors for Alzheimer's Disease haven't been completely identified the major risk factor being aging which we really cannot do much about. There has been a real change in death from chronic diseases of the elderly away from heart disease and stroke to Alzheimer's Disease.

Judy.: So let's go on to what we've learned so far in the past 25 years.
Dr. Pendlebury.: What we've recognized and realize in the last 25 years is that the pathologic changes that underlie a condition we call Alzheimer's are present in the brain for two decades, may be even longer, before the disease actually starts. What that means is there's a long preclinical phase probably beginning in somebody in their fifties that eventually leads to the condition that we call Alzheimer's Disease. That's really changed the way we think about the diagnosis and eventually will be changing the way we think about the treatment.

Judy.: It would be helpful to be diagnosed before some of the symptom start?

Dr. Pendlebury.: I think that where the field is going is to recognize if we could intervene in the disease before any symptoms have started where there was already pathology in the brain we could probably cure Alzheimer's disease. We could probably keep it from ever developing and it would not be a major problem going forward. One of the problems today is that many of the treatments that are currently being developed and that are available probably are not particularly helpful because the disease has advanced to a point where there is a lot of neuronal depth and effects on synapses in the brain and by that time it's probably too late to do a whole lot in terms of getting the disease under control. We really have to be much more proactive about identifying the disease before it starts.

Judy.: That would be pretty hard for people I would think if you're in your late forties or early fifties and doing some of the routine benchmark exams that you should be having at that age to include something for Alzheimer's thinking that do you really want to know in 20 years?

Dr. Pendlebury.: I don't think it's going to make a whole lot of sense to identify people who are destined to develop Alzheimer's disease until we have some affective treatments that we can use at that point in time to prevent the disease from happening. I'm cautiously optimistic that's what's going to happen in the next 10-15 years that we will be in a position to identify people and intervene appropriately to keep the disease from happening.

Judy.: Let's talk about the disease itself what does it look like in the brain and how you know?

Dr. Pendlebury.: I brought along an illustration that shows pretty much what's going on in an Alzheimer's brain. Basically there are two changes that you can see. The illustration on the screen now in the upper panels you can see what the brain looks like to the naked eye. On the left is a normal looking brain and on the right is a brain that is from a person who died of Alzheimer's Disease after about 10 years of symptoms. What we see in the right hand panel in the upper right hand panel isatrophy of the brain. It shrunk in and lost much of its structure and actually about 50 to 70% of the brain cells are gone from the brain at that point. In the lower panels on the left and right you can see the pathology that is present if we look at the brain under the microscope. In the left and panel we see pathologic change that we call the plaque. On the right hand side we see pathologilc change that we call a tangle. That's what we need to see in the brain at autopsy in order to make a definitive diagnosis of Alzheimer's Disease. These are the changes that I talked about that actually are present long before the disease actually becomes symptomatic and patients develop the dementia syndrome that's part of Alzheimer's Disease.
Judy.: Would it help people to get a brain scan? Would that be a normal procedure down the road if you're talking about prevention?

Dr. Pendlebury.: 10 years from now if we're in a position to offer treatments to prevent the disease then what we'd like to be able to do is to show that while somebody is alive in their fifties or sixties that they already have these changes developing and that will be possible by the use of what we call biomarkers. A blood test or an examination of spinal fluid or specialized kinds of brain x-rays one that comes to mind is the so called ‘pet scan’ that allows you to visualize the pathology in the brain 10-15 years before somebody is going to develop Alzheimer's Disease. Hopefully in association with treatments that can then clear the brain of that pathology and prevent the disease from ever happening.

Judy.: What are some of the other changes that you see and research in treatment in the next 10-15 years?

Dr. Pendlebury.: I think the other change we can see is what I call the clinical spectrum of Alzheimer's Disease. I brought along a visual to illustrate that. Rather than thinking about Alzheimer's Disease as a disease that is always associated with symptoms we can now talk about of preclinical phase of the disease. Again I've talked about it in terms of 10, 15 years before the disease actually starts where there is no dementia, is no memory problem, the person is functioning perfectly normally yet already has pathology developing in the brain. Then there's this intermediate phase of the disease called mild cognitive impairment where there's a little bit of memory loss and that's more than one would expect for aging but is not having a significant impact on day to day functioning. These are the points in time where we want to try to identify people again assuming that we have treatments to intervene at that point and prevent the disease from happening.

Judy.: And there is research on the way?

Dr. Pendlebury.: There's lots of research underway, and what I'm telling people now is that the field is really going in that direction. The major research dollars that are being allocated to Alzheimer's Disease are focused on trying to find ways to improve our diagnosis before the disease develops and to begin to develop treatments that are going to put the pathology at a dead end so that it does not lead to symptoms of Alzheimer's Disease.

Judy.: Is there always a similar progression in the disease as far as how rapidly it develops in the person?

Dr. Pendlebury.: No it depends on the age of onset so people who develop Alzheimer's Disease in their late fifties or early sixties tend to have a much more rapidly progressive course and people who developed the disease in their seventies eighties and nineties. In fact if a person is very old at the time they develop Alzheimer's Disease say in their mid-eighties to nineties it may not have much of an impact at all on the overall quality of life. Age of onset is a major predictor of how rapidly the disease progresses. The other thing that we've learned is that the disease doesn't always that is all Alzheimer's disease doesn't always develop its first symptom as memory loss. There is a so called non amnestic form of Alzheimer's disease in which memory loss is not a prominent feature at least early on. Patients who develop these more atypical forms of Alzheimer's Disease actually may present with more prominent language problems or more prominent visual disturbances including visual hallucinations.
rather than a memory problem. That's one of the reasons why we've begun to change the criteria used to diagnose the disease recognizing that loss of memory is not always the first symptom.

Judy.: I'm sure when you're dealing with a brain there's any number of things that can be symptomatic.

Dr. Pendlebury.: Exactly so the exact location in where the disease begins pathologically will predict the kind of symptoms that a person has early on.

Judy.: If someone's watching this program and is concerned about themselves or family member which they do as far as the first step?

Dr. Pendlebury.: The first step clearly is to contact the primary care provider whoever that may be. I like to tell people that diagnosing Alzheimer's Disease is not rocket science you follow a very well outlined protocol in terms of taking a clinical history doing a careful neurological exam doing some routine laboratory studies and an ex-ray of the brain to make sure that something else is not causing the dementia syndrome with a pretty high level of confidence a primary care provider can make the diagnosis of clinical Alzheimer's Disease and begin the treatments that are currently available. If the primary care provider has the level of uncomfortable or a sense of discomfort in terms of evaluating or diagnosing the disorder, then the patient can always be seen at the Memory Center in Colchester.

Judy.: For more information on Alzheimer’s Disease we encourage you to contact the Alzheimer's Association. The website is alz.org or you can call the toll free number 1-(800)-272-3900. That's (800)-272-3900. Thanks so much for joining us again.

Dr. Pendlebury.: You're welcome.

Judy.: That's our program for today I'm Judy Simpson will see you again next time on Across the Fence.

Across the Fence is brought to you as a public service by the University of Vermont extension and WCAX TV.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the United States Department of Agriculture. University of Vermont Extension, Burlington, Vermont. University of Vermont Extension, and U.S. Department of Agriculture, cooperating, offer education and employment to everyone without regard to race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or familial status.