“You’re listening to Brain Talk, from the Johns Hopkins Brain Science Institute.”

Dr. Dawson: “As the disease progresses, patients with Parkinson’s disease become very disabled. They lose their jobs; they have problems with dementia, problems taking care of themselves, and essentially become a burden on their family and social structures that are required to care for these patients.”

Dale: “Dr. Ted Dawson is the Director of the Institute for Cell Engineering at Johns Hopkins School of Medicine. His lab is trying to understand why brain neurons die when someone gets Parkinson’s disease.

Today on Brain Talk: finding a cure for Parkinson’s disease.

Dr. Dawson says anyone can get Parkinson’s disease. It is the second most common neuro-degenerative disease after Alzheimer’s disease, and it’s caused by the clumping together of a protein called alpha-synuclein (ALPHA-syn-NEW-cle-in). This clumping leads to damage of dopamine neurons.

Dr. Dawson: “Dopamine neurons are particularly sensitive to the toxic effects of alpha-synuclein, but as the disease progresses, other neurons in the brain also become susceptible to the toxic effects of alpha-synuclein. So other parts of the brain become dysfunctional and degenerate as the disease progresses.”

Dale: “Symptoms of Parkinson’s include slowness of movement, rigidity and stiffness, and a tremor when someone’s at rest. While there is no cure, there are ways to alleviate the symptoms: prescription medication, surgery, or deep brain stimulation.

Doctors have identified genetic mutations behind Parkinson’s disease, and the good news is that much progress has been made in research over the past decade.”

Dr. Dawson: “My lab has taken that knowledge and created animal models, cellular models, and it’s these models that allow you to dissect at the molecular level what’s going on in a patient with Parkinson’s disease.

Dale: “All of this work’, says Dr. Dawson, ‘is helping to further understand the cause of Parkinson’s. But there are still challenges’”

Dr. Dawson: “We make remarkable discoveries that slow the progression, stop the disease in mice, and we all struggle to get it to the next level where we can begin to test this in humans. That’s the real big challenge.”
Dale: “Unfortunately, however, the National Institutes of Health is slashing funding, and pharmaceutical companies want proof that these discoveries will work in humans before they’ll pay the tens of millions of dollars needed to test and develop a drug. Dr. Dawson says 'many potential cures are stuck in what researchers call “The Valley of Death.’ Money raised by the Michael J. Fox foundation is helpful, however.”

Dr. Dawson: “But even there the investment in that is just the tip of the iceberg. A lot of really great innovative discoveries languish in this Valley of Death.”

Dale: “Despite the funding setbacks, researchers are making advances. And Dr. Dawson says he remains optimistic there’ll be a cure for Parkinson's.”

Dr. Dawson: “We just need to be persistent and continuing to gather more and more data that convinces the folks in funding agencies that these are agents that need to be moved forward into patients.”

Dale: “To learn more about Parkinson's disease go to brainscienceinstitute.org. I'm Dale Connelly and this is Brain Talk from Johns Hopkins University.”

Additional Information:

Read an article on Hopkins researchers finding a key to Parkinson's

The National Parkinson's Foundation
For over half a century, the National Parkinson Foundation (NPF) has focused on meeting the needs in the care and treatment of people with Parkinson's disease (PD).

The Michael J. Fox Foundation for Parkinson's Research
The Michael J. Fox Foundation is dedicated to finding a cure for Parkinson's disease through an aggressively funded research agenda and to ensuring the development of improved therapies for those living with Parkinson's today.

National Institute of Neurological Disorders and Stroke (NINDS)
The mission of the National Institute of Neurological Disorders and Stroke (NINDS) is to reduce the burden of neurological disease. As a part of this mission, the NINDS supports basic, translational and clinical research on Parkinson's disease (PD), a devastating and complex neurodegenerative disorder that progressively impairs the control of purposeful movement.

Learn how the Brain Science Institute has adapted to the reduction in funding for translating preliminary research into drugs for patients

http://www.brainscienceinstitute.org