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ACVIM Board-certified Large Animal Internist Dianne McFarlane, DVM, PhD is investigating the similarities between Pituitary Pars Intermedia Dysfunction (PPID) in horses and Parkinson's disease in humans.

"PPID is a naturally occurring disease of old horses which results from neurodegeneration of dopamine-producing neurons," says Dr. McFarlane, an assistant professor of physiological science at the Center for Veterinary Health Services at Oklahoma State University. "Degeneration of dopamine-producing neurons also causes Parkinson's disease in aged people."

In people, the damaged neurons control motor function, causing tremors or difficulty moving. In horses, the injured neurons regulate hormone production at the intermediate lobe of pituitary gland, causing abnormal hair coats, muscle loss and immune deficiencies.

Despite the differences in the clinical signs, Dr. McFarlane says similar events may initiate and perpetuate the degenerative process in both diseases. "If we can understand the factors that trigger degeneration of the dopamine-producing neurons in the horse, it may serve to better understand the events that precede Parkinson's disease," she said.

Prior to attending veterinary school, Dr. McFarlane received a master's degree in molecular genetics. Although she entered her residency with the plan to pursue a veterinary career in clinical practice, Dr. McFarlane was drawn back to research and a PhD program by the desire to better understand the process of aging and the development of age-related diseases.

"Understanding cancer, infectious diseases, or degenerative diseases in our pets helps to save both animals and people," says Dr. McFarlane. "Our project has the dual goal of understanding what factors contribute to the degeneration of dopamine-producing neurons in horses with PPID and in people with Parkinson's disease."



This campaign is part of our commitment to recognize the exemplary work you do that advances us all. Find out more by visiting our website at www.ACIVIM.org. For more information on research initiatives, visit www.ACIVIMFoundation.org.

1997 Wadsworth Blvd., Suite A, Lakewood, CO 80214
303-231-9933 | 800-245-9081 (US or Canada)

www.ACIVIM.org

