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## ALTERED COPPER METABOLISM: A NOVEL IMAGING BIOMARKER IN AGING

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Copper is a nutritional metal required for brain development and physiology. Disruption of copper homeostasis, either a copper deficiency or the accumulation of excess amount of copper in brain tissues, causes neurodegeneration and various symptoms of neurological disorders. Using copper-64 chloride ( $^{64}\text{CuCl}_2$ ) as a tracer, age-dependent changes of  $^{64}\text{Cu}$  uptake in the brains of Tau transgenic mice and age-matched C57BL/6 mice were assessed noninvasively and quantitatively by a longitudinal Positron Emission Tomography/Computed Tomography (PET/CT) imaging study. Age-dependent changes of cerebral  $^{64}\text{Cu}$  uptake were detected in the mice, showing decreased  $^{64}\text{Cu}$  uptake in the brains of Tau transgenic mice at older age compared with  $^{64}\text{Cu}$  uptake in the brains of Tau transgenic mice at a younger age and age-matched C57BL/6 mice. The findings suggest that altered copper metabolism is a novel, promising imaging biomarker for noninvasive assessment of brain aging with PET/CT using  $^{64}\text{CuCl}_2$  as a tracer ( $^{64}\text{CuCl}_2$ -PET/CT).

### Biography

Fangyu Peng has been graduated from Jiangxi Medical College, China as Medical Doctor and College of Medicine, University of South Florida, USA with PhD in Medical Microbiology and Immunology. Later on he obtained his postgraduate clinical pathology residency training from the Update Medical University, Syracuse, New York and nuclear medicine residency training from the University of Connecticut Health Center, Farmington, Connecticut. Fangyu Peng is certified in clinical pathology by the American Board of Pathology and nuclear medicine by the American Board of Nuclear Medicine. Presently he is working as a nuclear medicine physician-scientist to practice clinical nuclear medicine and conduct translational research in nuclear medicine and molecular imaging at the University of Texas Southwestern Medical Center at the Dallas, Texas, USA.

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