

John Michael Uszler, MD, MS

Clarifying brain function concerns with SPECT brain perfusion imaging

Physician | Nuclear Medicine | SPECT Brain Perfusion Imaging

Artificial Intelligence in Medical Imaging | Medical Literature Review | Strategic Collaboration

drspectscanoffice@gmail.com | drspectscan.org | Southern California

PROFESSIONAL POSITIONING

Board-certified physician with decades of experience in Nuclear Medicine and functional brain imaging, with specialized focus on SPECT brain perfusion medical imaging interpretation. Clinical work is grounded in independent review of complete imaging datasets, recognition of regional cerebral perfusion patterns, and practical reporting that relates objective physiological findings to the clinical question. Current professional interests include responsible uses of artificial intelligence (AI) in medical imaging and supplementary medical-literature discovery after independent image interpretation and diagnostic formulation.

CORE EXPERTISE

- SPECT brain perfusion imaging and high-volume independent clinical interpretation
- Recognition of regional cerebral perfusion patterns across neuropsychiatric and neurologic applications
- Traumatic brain injury-associated brain perfusion patterns and clinically relevant interpretation
- Clinical reporting clarity, reproducibility, and defensibility frameworks
- Medical imaging workflow optimization, including transition from legacy processing to modern pipelines
- Supplementary AI-assisted medical-literature discovery after independent image interpretation and diagnostic formulation
- Cross-disciplinary collaboration across medical imaging, psychiatry, neurology, and brain health

ACADEMIC APPOINTMENT

Assistant Clinical Professor of Molecular and Medical Pharmacology

UCLA David Geffen School of Medicine

Academic affiliation supporting clinical and educational engagement in radiopharmacology, nuclear medicine-related domains, and translational medical imaging context.

CLINICAL EXPERIENCE

Medical Director - SPECT Brain Perfusion Imaging

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- Independent processing, review, and interpretation of complete SPECT brain perfusion image datasets.
- Development of structured reporting approaches emphasizing clinical applicability and defensibility.
- Integration of brain perfusion findings with cognitive, behavioral, neurologic, and psychiatric clinical frameworks.
- Professional focus on making physiological imaging findings more understandable, reproducible, and clinically useful.

Nuclear Medicine Physician

Decades of diagnostic nuclear medicine experience, including extensive work in SPECT brain perfusion imaging and practical clinical interpretation. Emphasis on clinically meaningful

recognition of regional cerebral perfusion patterns, quality control, and communication of imaging findings to referring clinicians.

SPECIALIZED EXPERIENCE - SPECT BRAIN PERFUSION IMAGING

- Longitudinal experience with large-scale SPECT brain perfusion medical imaging interpretation.
- Longstanding working familiarity with Amen Clinics brain SPECT acquisition workflows and clinical applications.
- Interpretation of regional cerebral perfusion patterns associated with traumatic brain injury, neurodegenerative change, and psychiatric clinical questions.
- Recognition of the clinical and operational limitations of legacy processing systems and the need for modernization.
- Practical understanding of the tension between image appearance, quantitative support, report clarity, and clinical defensibility.

ARTIFICIAL INTELLIGENCE AND MEDICAL IMAGING

- Artificial intelligence (AI) refers to computer-based systems designed to organize information, recognize relationships, and assist with research and other reasoning tasks.
- In current clinical work, AI use is limited to supplementary medical-literature discovery after independent image interpretation and diagnostic formulation are complete.
- AI is not used to process SPECT images, assess image quality, analyze patient images, identify brain perfusion findings, or formulate diagnostic impressions or considerations.
- No patient-identifying information, clinical records, or scan data are supplied to AI.
- Original literature sources are reviewed, and Dr. Uszler retains full responsibility for the final report and all professional conclusions.

STRATEGIC COLLABORATION INTERESTS

- Modernization of SPECT image-processing and interpretation workflows.
- Professional dialogue concerning responsible future applications of AI in medical imaging, distinct from current patient-image interpretation.
- Integration of imaging findings with psychiatric and neurologic clinical workflows.
- Multi-site imaging standardization and defensibility across clinical operations.
- Development of clinically practical frameworks that strengthen the credibility and usefulness of functional brain imaging.

TECHNICAL FOCUS AREAS

- Fan-beam SPECT reconstruction considerations and off-axis acquisition issues.
- Head motion, sampling geometry, and reconstruction-quality limitations in clinical practice.
- Energy spectrum optimization, including Tc-99m photopeak and scatter-related signal-to-noise considerations.
- Legacy processing modernization and evaluation of emerging imaging architectures, including possible future roles for AI.

CONTACT

Email: drspectscanoffice@gmail.com

Website: drspectscan.org

Location: Southern California