

# Study of pseudo-continuous arterial spin labeling and dynamic susceptibility

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## Abstract

Arterial spin labeling (ASL) will soon be available as a routine clinical perfusion imaging sequence for a significant number of MRI scanners. The ASL perfusion technique offers similar information as conventional dynamic susceptibility sequences; however, it does not require intravenous contrast and can be quantified. The appearance of pathology is significantly impacted by the ASL techniques used. Familiarity with the available sequence parameter options and the common appearances of pathology will facilitate perfusion interpretation. At Wake Forest University School of Medicine, we have implemented an automated processing pipeline capable of handling a substantial clinical volume of perfusion acquisitions. Over the past 2 years over 8,000 clinical ASL examinations have been performed. These cases have revealed many pathologic and physiologic processes readily identified with quantitative perfusion imaging. Arterial spin labeling (ASL) perfusion MRI imaging was conceived over 15 years ago. Since that time the technique has largely existed in the research realm because of the complex post-processing requirements. Many research studies have demonstrated the potential clinical utility of the sequence, but until now a large scale clinical implementation has not been achieved. The perfusion sequence has several benefits over traditional contrast bolus techniques. First, ASL requires no Gadolinium-based contrast agent. Due to fear of nephrogenic systemic fibrosis, the acquisition of perfusion data in a clinical population full of chronic renal failure patients has been problematic and caused the radiologist great consternation while protocoling studies. ASL allows the perfusion data acquisition without the associated fear. Acquiring perfusion data in young children with bolus techniques has also been problematic because of the necessary intravenous access. If contrast is not needed for the routine examination, using ASL avoids a potential needle stick in the sleeping baby.

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## Biography

Pierre Reginster is currently working at CHC Liege, Belgium.