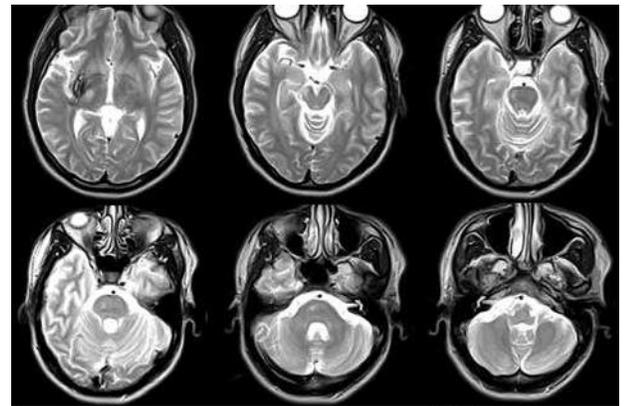


**MRI**  
**STROKE**

### Silent Midlife Cerebral Infarcts Detected by MRI Studied in Large Cohort

The prevalence of silent cerebral infarction (SCI) and its associated risk factors were reported recently in *Stroke*. The study cohort consisted of 2,040 “Framingham offspring” who came to the sixth examination (1996-1998), were imaged with brain MRI between 1999 and 2005, and were negative for clinical stroke at MRI. The group consisted of 53% females and had a mean age of 62. Led by researchers at Boston University, the results showed at least 10.7% of the cohort had at least one SCI. The infarction occurred most often in the basal ganglia (52%), followed by other subcortical areas (35%) and cortical areas (11%). Associated findings were stage 1 hypertension, high plasma homocysteine, atrial fibrillation, carotid stenosis of more than 25%, and increased carotid intimal-medial thickness.<sup>1</sup>

**Conclusion: Silent midlife cerebral infarcts occur with 11% prevalence and are associated with risk factors for clinical stroke.**



MRI demonstrating brain infarction and degeneration.

**MRI**  
**HEPATITIS**

### MRI Diffusion Imaging Helps Diagnose Fibrosis, Inflammation in Chronic Hepatitis

The inflammation of chronic hepatitis can lead to fibrosis and subsequent cirrhosis. To assess the presence of fibrosis and inflammation, a recent study measured the apparent diffusion coefficient (ADC) with both conventional diffusion-weighted imaging (CDI) and diffusion tensor imaging (DTI). As reported in the *Journal of Magnetic Resonance Imaging*, researchers led by New York University studied 31 patients with breath-hold, single-shot, echo-planar imaging with CDI and DTI. The patients underwent subsequent liver biopsies, with all samples scored for fibrosis and inflammation. The ADC proved significantly lower in patients with liver fibrosis and inflammation than in those without fibrosis or inflammation. CDI also outperformed DTI.<sup>2</sup> **Conclusion: Diffusion imaging can portend liver fibrosis and inflammation in chronic hepatitis.**

**MRI**  
**ASTHMA**

### Hyperpolarized <sup>3</sup>Helium Diffusion MRI Depicts Microstructure Changes in Asthma

A recent study in the *Journal of Magnetic Resonance Imaging* investigated <sup>3</sup>helium (<sup>3</sup>He) diffusion at short and long time scales in the lungs of asthmatics. The authors depicted the lung changes by evaluating 14 asthmatics, 9 chronic obstructive pulmonary disease patients, and 14 healthy controls. Led by researchers from the University of Virginia, the results found increased mean apparent diffusion coefficients (ADCs) over the short- and long-time-scale group (9% and 27%, respectively) in asthmatics compared to the healthy cohort. The group-mean % ADC – abnormal showed 107% and 272% increases, respectively. The COPD patients displayed much

greater elevations.<sup>3</sup> **Conclusion: Increased diffusion of hyperpolarized <sup>3</sup>He occurs in asthmatic patients, reflecting small airway changes in lung microstructure.**

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**NEXT ISSUE: MORE CLINICAL TRIAL IMAGING NEWS AND STUDIES**



**THE WCC NOTE™: Volume 2, Number 19 – July 23, 2008**

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