

SICKLE CELL DISEASE & IRON OVERLOAD

Sickle cell disease patients who receive regular or intermittent blood transfusions are at risk of iron overload. Excess iron is stored in the liver and an accumulation can lead to organ damage such as liver fibrosis or cirrhosis.

7% of sickle cell patients' deaths are directly attributable to iron overload³. The accurate assessment and monitoring of body iron is therefore crucial.

FerriScan has now been established in Sickle Cell Centres of Excellence throughout the world as the most accurate MRI-based method for assessment of liver iron, eliminating the need for liver biopsy.

FerriScan is recommended in treatment guidelines for the annual measurement of liver iron concentration.

The 2008 Nursing Practice Guidelines: Care of the Patient with Sickle Cell Disease and Iron Overload recommends an accurate quantification of LIC at the beginning of chelation therapy and

regularly thereafter. FerriScan is endorsed as a suitable test.

The 2008 Standards for the Clinical Care of Adults with Sickle Cell Disease in the UK recommends all transfused patients have regular monitoring of LIC using MRI.

The UK Sickle Cell Society recommends FerriScan for measuring LIC in sickle cell disease patients receiving blood transfusions.

The liver is the body's primary site of iron storage and is closely correlated to total body iron stores⁴. An accurate estimate of these iron levels is therefore vital to both the diagnosis and management of patients with iron overload.

FerriScan applies its unique patented software and analysis process to R2-MRI images, providing a highly accurate estimate of Liver Iron Concentration¹.

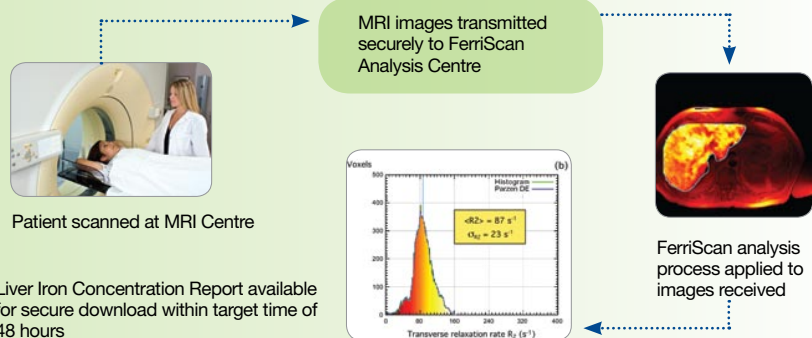
FerriScan provides the clinician with accurate, reliable information on which to base patient management decisions on commencement of chelation therapy, adjustments to dosage and changing the mode of chelator delivery.

Testing of serum ferritin levels can provide a useful adjunct to FerriScan analysis as it indicates how iron levels are trending over time. However, the correlation between serum ferritin and LIC is not close enough for it to be used as a basis for the accurate determination of treatment options².

Key FerriScan features:

- FerriScan provides an accurate, non-invasive MRI-based measurement of liver iron concentration
- A service that can be implemented on most 1.5 Tesla scanners
- FerriScan requires only a 10 minute scan time and no contrast agents are needed
- No requirement for customers to purchase new software or hardware
- An easy process to establish the FerriScan service in MRI centres and hospitals
- No establishment fees – costs are incurred per scan only
- The process uses patented spin density projection R2-MRI imaging technology¹
- FerriScan has the highest sensitivity and specificity over the range of liver iron concentrations of any MRI-based method of LIC measurement¹
- Results that are unaffected by inflammation, fibrosis or cirrhosis¹
- Proven accuracy in the determination of liver iron concentration¹
- International regulatory approvals (USA, Canada, Europe, Australasia)
- The assurance of ISO 9001 certification of analysis procedures
- A centralised analysis facility providing security of data and 48-hour results turnaround
- Results that are reliable and reproducible over time and across MRI centres and models of scanner¹

How the FerriScan service works:



1. St.Pierre TG et al Noninvasive measurement and imaging of liver iron concentrations using proton magnetic resonance. *Blood* 2005; 105: 855-861
 2. Karam LB et al. Liver biopsy results in patients with sickle cell disease on chronic transfusions: poor correlation with ferritin levels *Paediatric Blood Cancer* 2008; 50: 62-65
 3. Darbari et al. Circumstances of death in adult sickle cell disease patients. *American Journal of Hematology* 2006; 81: 858-863
 4. Angelucci, E et al Hepatic iron concentration and total body iron stores in thalassemia major. *New England Journal of Medicine* 2000; 343:327-331

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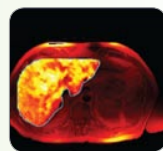
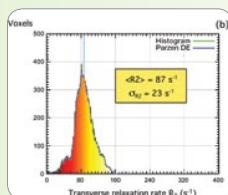
How the FerriScan service works:



Patient scanned at MRI Centre

Liver Iron Concentration Report available for secure download within target time of 48 hours

MRI images transmitted securely to FerriScan Analysis Centre



FerriScan analysis process applied to images received

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