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**Lab Dept:**                      **Anatomic Pathology**

**Test Name:**                    **IRON, LIVER TISSUE**

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***General Information***

**Lab Order Codes:**            FELI

**Synonyms:**                    FE, Liver; Hepatic Iron Concentration; Hemochromatosis; Total Iron, Liver Tissue; Hepatic Iron Index

**CPT Codes:**                    83540 – Iron

**Test Includes:**                Liver tissue iron measured in mcg/g dry wt and iron index measured in mcmol/g/year.

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***Logistics***

**Test Indications:**            Diagnosis of hemochromatosis

**Lab Testing Section:**        Anatomic Pathology - Sendouts

**Referred to:**                   Mayo Medical Laboratories (MML Test# FET/8350)

**Phone Numbers:**            MIN Lab: 612-813-6280

STP Lab: 651-220-6560

**Test Availability:**            Monday - Saturday

**Turnaround Time:**          2 - 5 days, 3 - 6 days if repeat testing is required, performed Monday - Friday

**Special Instructions:**        Age is required on request form to calculate the iron index. Blocks will be returned two weeks after the analysis is complete unless requested earlier.

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***Specimen***

**Specimen Type:**                Tissue, liver (fresh)

Paraffin block is also acceptable if not more than 1 or 2 cuts have been made to it for slides.

**Container:** Mayo fresh tissue metal-free specimen vial (blue label) (supply T173) supplied from Mayo Medical Laboratories

Any specimen vial other than a Mayo metal-free vial used should be plastic, leached with 10% nitric acid for two days, rinsed with redistilled water, and dried in clean air.

**Draw Volume:** Minimum: 2 mg liver tissue

**Processed Volume:** Same as Draw Volume

**Collection:** This is typically a piece of tissue from a 14 -gauge needle biopsy at least 0.5 cm long. If an 18-gauge needle is used, the tissue must be at least 1 cm in length. The 18-gauge needle produces a specimen that is thin and fragile and difficult to remove from paraffin.

**Special Processing:** Lab Staff: Send fresh specimen refrigerated. Send paraffin blocks at room temperature. Forward promptly.

**Patient Preparation:** Physician preference

**Sample Rejection:** Fresh specimen not in metal-free container; mislabeled or unlabeled specimen

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***Interpretive***

**Reference Range:**

Males:	200 - 2400 mcg/g dry weight
Females:	400 - 1600 mcg/g dry weight
IRON INDEX (> or = 13 years:	<1.0 mcmol/g/year
Note: Reference values have not been established for patients less than 13 years of age.	

**Critical Values:** N/A

**Limitations:**

Formalin-fixed, paraffin-embedded tissue can be used when histiologic examination including iron stains are requested, in addition to the hepatic iron concentration and calculated Hepatic Iron Index. However, fresh or frozen tissue is preferred.

A minimum of 2 mg of liver tissue is required for analysis. This is typically a piece of tissue from a 14-gauge needle biopsy at least 0.5 cm long. Recently it has become popular to use an 18-gauge needle for biopsy. This produces a specimen that is thin and fragile and, therefore, more difficult to recover from paraffin. If an 18-gauge needle biopsy is performed, this tissue must be at least 1 cm in length and submitted in paraffin.

Paraffin blocks from which many slides have been previously cut often appear to contain sufficient quantity of tissue, however, the specimen is often very thin and <2 mg in weight.

**Methodology:**

Perkin-Elmer ELAN 6100 by Inductively Coupled Plasma/Mass Spectrometry (ICP/MS)

**References:**

[Mayo Medical Laboratories](#) (May 2011)

**Updates:**

5/23/2011: Reference range update adding comment that ranges have not been established for patient <13 years of age.