Hemochromatosis Testing

**INDICATIONS FOR TESTING**
Suspicion of hereditary hemochromatosis (HH) (family history, compatible symptoms)

**ORDER**
Iron and Iron Binding Capacity
Note: Test includes serum transferrin saturation (STS)
AND
Ferritin (SF)

- **STS <45% and elevated SF**
  - Repeat STS and SF tests and rule out secondary iron overload
  - STS <45% and elevated SF
    - Consider evaluation of the following:
      - Aceruloplasminemia
      - Non-HFE HH
        - Type 3 (transferrin receptor 2)
        - Type 4 (ferroportin)
        - Hyperferritinemia with cataracts

- **STS <45% and normal SF**
  - No further testing at this point
  - Repeat STS and SF tests at 2-year intervals
    - If both elevated, do liver biopsy

- **STS ≥45% and/or elevated SF**
  - Repeat STS and SF tests
    - STS ≥45% and/or elevated SF for age and sex (esp. if >2x normal)
      - Secondary iron overload

  - No further testing at this point
  - Repeat STS and SF tests

**FOR ADULTS, ORDER**
Hemochromatosis (HFE)
3 Mutations gene testing (accounts for >90% of mutations in Caucasians)

- C282Y/wt
- H63D/H63D, H63D/S65C
  - Monitor STS
  - Consider:
    - Liver biopsy
    - Alternative gene testing (TFR2, SLC40A1)

- C282Y/C282Y
  - Hemochromatosis confirmed
  - Supports diagnosis
  - Hemochromatosis confirmed

  - ORDER
    - Ferritin
    - Aspartate Aminotransferase, Serum or Plasma
      - Ferritin ≥1,000 µg/L
        - Aspartate aminotransferase (AST) abnormal
          - Liver biopsy with hepatic iron concentration
      - Ferritin <1,000 µg/L
        - Aspartate aminotransferase (AST) normal
          - Phlebotomy
          - Monitor STS
          - Family screening

- C282Y/H63D, C282Y/S65C
  - Positive
  - HAMP gene testing (accounts for <10% of cases)

  - CONSIDER
    - HAMP gene testing
    - Liver biopsy
    - Alternative gene testing

**FOR PEDIATRICS, CONSIDER**
HFE2 gene testing (accounts for >90% of cases)

- C282Y/wt
- H63D/H63D, H63D/S65C
  - Monitor STS
  - Consider:
    - Liver biopsy
    - Alternative gene testing (TFR2, SLC40A1)