Microcytic Anemia Testing

**INDICATION FOR TESTING**
Microcytic anemia (low MCV)

**ORDER**
- Ferritin
- AND
- Iron and Iron Binding Capacity

**Abnormal iron parameters**
- **Low SF**
  - Increased TIBC, low serum iron, low Tsat
  - Evaluate for other types of anemia
    - IDA
    - Other results

- **Nondiagnostic SF**
  - Decreased TIBC, high serum iron, low Tsat
  - Evaluate for other types of anemia
  - IDA

- **High SF**
  - Consider inflammatory disease, sideroblastic anemia, aplastic anemia, bone marrow failure

**Normal iron parameters**
- **Check RBC count**
  - Low
    - Evaluate for anemia of chronic disease/inflammation
      - HbA2 not elevated
        - Evaluate for β thalassemia
      - HbA2 elevated
        - Consider evaluation for α thalassemia
  - Normal or high
    - CONSIDER Hemoglobin Evaluation Reflexive Cascade
      - Erythrocyte porphyrin (EP), Whole Blood
        - STR elevated
          - ORDER Soluble Transferrin Receptor
            - STR not elevated
              - Evaluate for other types of anemia
                - IDA
        - EP not elevated
          - Consider bone marrow biopsy
        - EP elevated
          - IDA

**Abbreviations**
- EP: Erythrocyte porphyrin
- HbA2: Hemoglobin A2
- IDA: Iron deficiency anemia
- MCV: Mean corpuscular volume
- RBC: Red blood cell
- RDW: Red blood cell distribution width
- SF: Serum ferritin
- STR: Soluble transferrin receptor
- TIBC: Total iron binding capacity
- Tsat: Transferrin saturation

*Also see Hemoglobinopathies Testing Algorithm*