### Background

Scoliosis is a side to side curvature for the spine that can occur throughout childhood, but is most commonly seen in the preadolescent years and frequently identified during periods of rapid growth. Scoliosis should be regarded as a sign and not a diagnosis, as there are many potential causes of scoliosis, including congenital spine malformations and neuromuscular disorders. The most common form of scoliosis is idiopathic, where no clear etiology exists in an otherwise healthy patient.

Waistline asymmetry, scapular asymmetry, and rib prominence may be the initial signs of an underlying scoliosis. As scoliosis progresses, these asymmetries typically worsen. Curve progression in idiopathic scoliosis is related to growth remaining. Skeletally mature patients (Tanner stage IV or age 15 for girls and age 17 for boys) with mild curves will not progress, while skeletally immature patients are at high risk for progression. Skeletally mature patients with large curves (>50 degrees), however, can continue to progress slowly over their lifetime. Treatment is dictated by skeletal maturity and curve magnitude and may include observation, bracing, or surgical treatment.

### Initial Evaluation

- Medical history, including growth and development, and family history
- Physical examination using Adam's forward bend test or scoliometer, if available

### Initial Management

- Asymmetry present on exam, no scoliometer available: obtain PA standing scoliosis radiograph on full length film (36 inch)-a thoracic or lumbar x-ray is not adequate.
- <7 degrees via scoliometer measurement: no x-ray needed; monitor at well-child visits
- >7 degrees via scoliometer measurement: obtain PA Standing scoliosis radiograph for skeletally immature children
  - Age 11 years-17 years for whom x-ray shows curve less than 20 degrees; Age 0-10 years for whom x-ray shows curve less than 10 degrees: patient to follow up with PCP in 4 months for repeat physical exam. If asymmetry or scoliometer measurement is increased, repeat x-ray
- Patients with curve <30 degrees with Risser maturity of 4 or 5: repeat radiograph in one year

### Pre-Visit Work Up

PA Standing scoliosis radiograph on full length films (36 inch). A thoracic or lumbar x-ray is not adequate. Many facilities do not have the equipment to accommodate this study. In that case, please refer the patient to Mission Children’s Radiology at the Reuter Children’s Outpatient facility.

### When to Refer

- Age 11 years-17 years: x-ray shows curve 20 degrees or greater
- Age 0-10 years: x-ray shows curve 10 degrees or greater
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| Return to Primary Care Endpoint | Patients with non-progressive curve, or patients who do not meet criteria for referral will be returned to their PCP for monitoring. |