FIBRODYSPLASIA OSSIFICANS PROGRESSIVA (FOP)

**Background:**  FOP (OMIM 135100) is a disorder of heterotopic (extraskeletal) ossification in which muscles and connective tissue, such as tendons and ligaments, are replaced by bone over time. This bone formation generally begins in early childhood and typically initiates in the neck and shoulders. Malformation of the great toe is another characteristic clinical feature. The incidence of FOP is ~ 1 in 2 million. Most cases are spontaneous mutations with no prior family history, but autosomal dominant inheritance has been observed.

**Assay:**  DNA is isolated from a blood sample and PCR is performed for coding exon 4 of the Activin Receptor Type 1A gene (ACVR1) and sequenced with positive and negative controls.

**Eligibility:**  Individuals suspected on a clinical basis to be affected.

**Utility:**  Diagnostic confirmation.

**Sensitivity:**  Heterozygous mutations in the ACVR1 gene at c.617G>A (Arg206His) have been identified in patients with classic features of FOP in 100% of cases. It is possible that patients with heterotopic ossification and atypical features of FOP (FOP variants) may not carry the ACVR1 c.617G>A mutation.

**Turnaround:**  3 weeks

**Fee:**  $420  
$520 for prenatal analysis (cost includes MCC studies)

**CPT codes:**  81403  
81403, 81265 for prenatal analysis

**Resources:**  [International Fibrodysplasia Ossificans Progressiva Association](https://www.fibero.org/)

Dr. Frederick Kaplan at the University of Pennsylvania is an expert in the diagnosis and management of FOP. He is available for consultation by calling 215-349-8726.