



**American  
College of  
Foot and Ankle  
Surgeons®**

## **ACFAS ADVANCED LEARNING PATHWAY: Pediatrics 2 – Tarsal Coalition, Congenital Vertical Talus, Flexible Flatfoot, Clubfoot**

### **Learning Objectives of this Pathway:**

- Describe the indications for resection of a tarsal coalition.
- Describe the outcomes for resected tarsal coalitions and how this informs the consent process.
- Explain appropriate treatment options for congenital vertical talus.
- Differentiate between various flexible and rigid pediatric flatfoot conditions.
- Explain appropriate treatment options for flexible pediatric flatfoot deformities including congenital calcaneovalgus and acquired pediatric flatfoot.
- Describe the principles in management of congenital talipes equinovarus (clubfoot).

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### **Day 1: Tarsal Coalition**

Clinical Sessions:  
[Tarsal Coalitions](#)

Journal Articles:

- [A Review of Tarsal Coalition and Pes Planovalgus: Clinical Examination, Diagnostic Imaging, and Surgical Planning](#)
- [Diagnosis and Treatment of Pediatric Flatfoot](#)  
*NOTE: covers flexible flatfoot, congenital vertical talus, tarsal coalition, iatrogenic/traumatic, skewfoot, etc.*
- [Functional and Radiological Outcomes After Tarsal Coalition Resections: A Minimum of 5-Year Follow-Up](#)
- [Reoperations After Tarsal Coalition Resection: A Population-Based Study](#)
- [Subtalar Coalitions: Does the Morphology of the Subtalar Joint Involvement Influence Outcomes After Coalition Excision?](#)
- [Calcaneonavicular Coalition Resection with Pes Planovalgus Reconstruction](#)
- [Resection Arthroplasty: Treatment for Calcaneonavicular Coalition](#)

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*The ACFAS learning pathways are a tool to be used by residency directors, fellowship directors and school faculty to aid with didactic learning during the COVID-19 crisis. They are not intended to replace a curriculum, but to supplement student and resident education during this time of need.*

*The learning pathways are divided into basic, intermediate, and advanced categories.*

*Pathways have been organized into specific topics that have a variety of educational materials from the ACFAS On Demand course content. They also include journal articles with links primarily from the Journal of Foot and Ankle Surgery (JFAS).*

### Outside Journals and Books:

- Rodriguez N, Choung DJ, Dobbs MB. “Rigid pediatric pes planovalgus: conservative and surgical treatment options” *Clin Podiatr Med Surg* 2010; 27:79-92.
- Furdon, SA, Donlon CR. “Examination of the newborn foot: positional and structural abnormalities.” *Advanc Neonatal Care* 2002; 2(5):248-258.
- Sankar WN, Weiss J, Skaggs DL. “Orthopaedic conditions in the newborn.” *J Am Acad Orthop Surg* 2009; 17:112- 122.

## **Day 2: Pediatric Flatfoot**

### Surgical Techniques e-Learning:

- [Common Foot & Ankle Procedures \(online format\)| Kidner Procedure](#)
- [Common Foot & Ankle Procedures \(online format\)| Gastrocnemius Recession Distal](#)
- [Rearfoot Reconstruction \(online format\)| Tendon Achilles Lengthening](#)
- [Rearfoot Reconstruction \(online format\)| Medial Approach Double Arthrodesis](#)  
*NOTE: watch from time stamp 5:46 to 9:02 for medial incision dissection used in STJ middle facet coalition resections.*
- [Rearfoot Reconstruction \(online format\)| Medial Calcaneal Displacement Osteotomy](#)
- [Rearfoot Reconstruction \(online format\)| Gastrocnemius Recession \(proximal\)](#)
- [Rearfoot Reconstruction \(online format\)| Talonavicular Joint Arthrodesis](#)  
*NOTE: watch time stamps from 8:55 to 11:03 for landmarks and soft tissue structures of medial incision approach along medial column used in some flatfoot procedures.*

### Podcasts:

[Arthroeresis: Too Much or Not Enough?](#)

### Journal Articles:

- [Diagnosis and Treatment of Pediatric Flatfoot](#)  
*NOTE: covers flexible flatfoot, congenital vertical talus, tarsal coalition, iatrogenic/traumatic, skewfoot, etc.*
- [Flexible Juvenile Flatfoot Surgical Correction: A Comparison Between Two Techniques After Ten Years' Experience](#)
- [Symptomatic Juvenile Flatfoot Condition: Surgical Treatment](#)

### Outside Journals and Books:

- David, MS., and Weinraub, GM (2020). Calcaneovalgus and Congenital Vertical Talus. In M.L. Butterworth and J.T. Marcoux (1<sup>st</sup> Ed.), *The Pediatric Foot and Ankle: Diagnosis and Management*. (Chapter 9). Basel, Switzerland: Springer.
- Mahan KT, Flanigan KP. (2013). Flexible Valgus Deformity. In J.T. Southerland (4<sup>th</sup> Ed.), *McGlamry's Comprehensive Textbook of Foot and Ankle Surgery* (Chapter 44). Philadelphia, PA: Lippincott Williams & Wilkins.

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- Evan, A. (2008) Flatfoot child treatment. *J American Pod Med Assoc* 98(5):386-393.
- Halabchi et al. (2013) Pediatric flexible flatfeet clinical aspects and algorithmic approaches. *Iran J Pediatrics* 23(3):254-256.
- Kwon, JY and Myerson, MS. (2010) Management of the flexible flatfoot in the child: a focus on the use of osteotomies for correction. *Foot Ankle Clin N America* 15:309-322.
- Pfeiffer, M et al (2006) Prevalence of flatfoot in the preschool aged children. *Pediatric*. 188: 634-639.
- Sullivan, J. (1999) Pediatric flatfoot evaluation and management. *J of American AcadOrthop Surg* 7:44-53.

### **Day 3: Clubfoot**

#### Podcasts:

[Clubfoot](#)

#### Journal Articles:

[The Natural History and Longitudinal Study of the Surgically Corrected Clubfoot](#)

#### Outside Journals and Books:

- Staheli, L. Clubfoot Ponseti Management 3<sup>rd</sup> Edition. Global HELP Organization, 2009.
- Cicchineli, LD., et al (2013). Clubfoot. In J.T. Southerland (4<sup>th</sup> Ed.), *McGlamry's Comprehensive Textbook of Foot and Ankle Surgery* (Chapter 74). Philadelphia, PA: Lippincott Williams & Wilkins.
- Hatch, DJ (2020). Congenital Talipes Equinovarus. In M.L. Butterworth and J.T. Marcoux (1<sup>st</sup> Ed.), *The Pediatric Foot and Ankle: Diagnosis and Management*. (Chapter 12). Basel, Switzerland: Springer.
- Cummings RJ, et al. "Congenital clubfoot." *AAOS InstrucCoursLect*2002; 51:385-400.
- Coplan J and Herzenberg J (2010). Non-Operative Treatment of Congenital Clubfoot. In *Drennan's The Child's Foot & Ankle* (2nd Ed.) McCarthy and Drennan editors, Lippincott Williams & Wilkins: p.64-74.-74.
- Dobbs MB, et al. "Treatment of idiopathic clubfoot: an historical review." *Iowa Orthop J* 2000; 20:50-64.
- Dobbs M, et al. Factors Predictive of Outcome After Use of the Ponseti Method for the Treatment of Idiopathic Clubfeet. *JBJS*, Jan 2004; 86-A (1): 22-27.
- McCauley JC. "Clubfoot: history of the development and the concepts of pathogenesis and treatment." *Clin Orthop Rel Res* 1966: 51-63.
- Morcuende J, et al. Radical Reduction in the Rate of Extensive Corrective Surgery for Clubfoot Using the Ponseti Method. *Pediatrics*, Feb 2004; 113(2): 376-380.

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- Parker SE, et al. "Multistate study of the epidemiology of clubfoot." *Birth Defects Res Part A: Clin Mol Teratol* 2009; 85:897-904.
- Ponsetti, Igancio V. *Congenital clubfoot: Fundamentals of treatment* (1996) Oxford University Press Inc., New York, N.Y.
- Radler C, et al. Radiographic Evaluation of Idiopathic Clubfeet Undergoing Ponseti Treatment, *JBJS*, June 2007; 89-A (6): 1177-1183.
- Roye DP, Roye BD. "Idiopathic congenital talipes equinovarus." *J Am Acad Orthop Surg* 2002; 10:239-248.
- Thompson , et al. Surgical management of resistant congenital talipes equinovarus deformities, *JBJS*, 1982; 64-A: 652-665.
- Turco, Vincent J. *Clubfoot* (1981) Churchill Livingstone Inc., New York , N.Y.

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