PES referral guidelines for children with suspected short stature

Suggestive history and findings of short stature

- Height <3rd percentile, decreasing growth velocity after 3 years of age; height below genetic potential
- Intrauterine growth restriction without catch-up growth by age 2
- Syndromic appearance, abnormal body proportions

Common causes of short stature

Familial or intrinsic short stature

Constitutional delay of growth and puberty
- Growth velocity <3rd percentile
- Delayed bone age

Idiopathic short stature
- Height < 2.25 SD below the mean
- Unlikely to attain adult height in the normal range (less than 63 inches for boys and 59 inches for girls)

SGA without catch-up growth by 2 years

Other causes

Endocrine abnormalities
- GHD
- Hypothyroidism
- Cushing's syndrome
- GH insensitivity

Metabolic disease
- Rickets
- Diabetes mellitus

Syndromes
- Turner's syndrome
- Noonan's syndrome
- Trisomy 21
- Russell-Silver Syndrome
- Prader-Willi Syndrome
- DiGeorge Syndrome

Chronic Gastrointestinal and Pulmonary illness

Glucocorticoid treatment

Musculoskeletal issues

Psychosocial issues

When to refer to Pediatric Endocrinologist

Poor growth
(<3rd percentile, decreasing growth velocity)

Suspected multiple hormone deficiencies

Items useful for consulting with Pediatric Endocrinologist

Previous growth data/growth charts

Bone age X-ray of left hand and wrist

Blood tests for
- Total or free T4 and TSH
- Comprehensive metabolic panel
- Complete blood count
- ESR or CRP
- IGF-1
- IGFBP-3
- Tissue transglutaminase IgA
- Total serum IgA
- Chromosome analysis if female child has features of Turner's syndrome

Additional information

Estimation of mid-parental target height

Boys: Mother's height + 5 inches averaged with father's height

Girls: Father's height – 5 inches averaged with mother's height

Adapted from Pediatric Endocrine Society 2020