Clinical Practice & Referral Guideline – Short Stature

* The recommendations in the below guideline do not indicate an exclusive course of treatment. The guideline’s intent is to build a consensus of care in the pediatric market and provide a framework for clinical decision making.

**Purpose:** To assist the clinician in the evaluation of short stature and to help the clinician determine if referral to endocrinology is warranted.

**Definition:** Children who have growth failure over a significant period of time develop short stature. This is defined as absolute height, which is less than 2 standard deviations for age, and/or a linear growth velocity consistent with less than 1 standard deviation for age.

**History:** Key point needed in the evaluation include
- a) birth history including gestational age and birth measurements
- b) growth charts including actual weight and height measurements
- c) parent and grandparent heights
- d) mid-parental height - (average the father’s and mother’s height, then add an inch if the child is male, or subtract an inch if the child is female)
- e) family history of constitutional growth delay
- f) family history of endocrine, gastrointestinal disease and cardiac disease
- g) dietary history
- h) exercise history

**Physical:** Weight, height, BP. An accurate means of height measurement is crucial, e.g. using a stadiometer. Plot each and also plot weight for height velocity if available. A good physical exam is necessary. Look for signs of chronic diseases that would delay growth. Also look for dysmorphology that would be suggestive of a chromosomal abnormality such as Turners or mosaic Turners Syndrome.

**Laboratory Evaluation:**
- a) Free T4, TSH, IGF-1 Somatomedin C, if over age 5, or IGF-BP3 if under age 5 comprehensive chemistry panel, CBC with differential, urinalysis.
- b) Bone age (send films or CD-ROM copy as well as the report).
**Indication for Endocrinology Referral:**

a) Height below 3\textsuperscript{rd} percentile on at least 2 occasions OR  
b) Height velocity less than 5 cm/year in greater than 2 years old up to puberty onset.  
c) Height below the range defined by parental height. (defined in history)  
d) Bone age 2 standard deviations below chronological age and no family history of constitutional delay

**Exclusions:**

a) Weight falling off before height  
b) Weight falling off more quickly than height  
c) Known non-endocrine chronic illness or genetic disorders that account for abnormal growth. Exception: Turner's Syndrome and Mosaic Turner's Syndrome  
d) Underweight toddler under age 2

**Acknowledgement:** Special thanks to Stephen Anderson, MD a physician at Pediatric Endocrine Associates and Inger Hansen, MD, Emory Children’s Center, Assistant Professor of Pediatrics, Pediatric Endocrinology and a member of the Georgia Pediatric Subspecialist, IPA for his assistance with preparing this document.

**References:**

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