Children's Hospital Of Wisconsin

Co-Management Guidelines

To support collaborative care, we have developed guidelines for our community providers to utilize when referring to, and managing patients with, the pediatric specialists at Children's Hospital of Wisconsin. Provide protocols for jointly managing patient cases between community providers and our pediatric specialists.

Growth Disorders

Short Stature

Diagnosis/symptom	Referring provider's initial evaluation and management:	When to initiate referral/ consider refer to Endocrine Clinic:	What can referring provider send to Endocrine Clinic?	Specialist's workup will likely include:
Signs and symptoms • Height <3rd percentile • Height velocity <5 cm per year between ages 3 and puberty (the lower limit of normal is as low as 4 cm per year in the 1-2 years before puberty, but < 5 cm per year is a good cutoff for initial evaluation) • Parental concern about height	**Diagnosis and Treatment** 1. Accurately measure height using a stadiometer 2. Plot height on a growth chart 3. Calculate mid-parental height, i.e. parent heights are averaged (add their heights, divide by 2) and then add 5 inches (13 cm) for boys, minus 5 inches (13 cm) for girls. 4. If the child's height is less than the 3rd percentile then he or she has short stature by definition. 5. If his/her percentile line meets the right side of the growth chart more than 9 cm below the midparental height, then too the child is too short for his/her genetic potential. 6. In such cases, consider possible causes. If an obvious systemic illness is present, that is the most likely cause. If weight percentile is less than height percentile,	**The following situations are usually appropriate for referral to endocrinology:** 1. Extreme short stature (height below the 1st percentile, >2.25 SD below the mean) 2. Short stature (height <3rd percentile) with no obvious explanation 3. Height velocity <5 cm per year 4. Abnormal finding on initial screen (low IGF-1 or IGFBP3, abnormal TSH (urgent action needed if TSH is >10) 5. Failure of an SGA infant to catch up to the normal height range (3rd percentile) by age 2 6. Parental concern and desire for specialist evaluation in a child with short stature (<3rd percentile, or more than 9 cm below midparental height)	**1. Using Epic** • Please complete the external referral order **In order to help triage our patients and maximize the visit, the following information would be helpful include with your referral order:** • Urgency of the referral • What is the key question you would like answered? Note: Our office will call to schedule the appointment with the patient. **2. Not using Epic external referral order:** • In order to help triage our patients maximize the visit time, please **fax** the above information to **(414-607-5288**) • It would also be helpful to	• If not done already, we will usually check IGF-1 and IGFBP3 (to screen for growth hormone deficiency), TSH and reflex FT4 (to screen for hypothyroidism) and a bone age. • Females will usually need a karyotype (to screen for Turner syndrome). • Other labs will be added on a case by case basis. • If initial labs are suspicious and a low growth velocity is confirmed, then a growth hormone stimulation test may also be performed. • In most cases the child will NOT be a candidate for growth hormone therapy unless a specific approved cause is found (e.g. lab-confirmed growth hormone deficiency, Turner syndrome, SHOX haploinsufficiency, Noonan syndrome, Prader-Willi syndrome, chronic renal failure, SGA with failure to catch-up).

Updated by: Dr. Omar Ali
Updated on: 5/15/17

Children's Hospital of Wisconsin

	nutrition may be factor, especially for children on high dose ADHD meds. In these cases, treat underlying disease, and improve nutrition (encourage high calorie, high protein foods, such as pizza, dairy and related alternative options) 7. If no obvious cause, and not familial, it is appropriate in most cases to encourage good nutrition and see back in 6 months to reassess height velocity. But in older children (greater urgency because less time left) or in anyone with ANY suspicion of thyroid disorder, an initial screen is advisable. 8. In case ANY symptoms suggest hypothyroidism, or in case of urgency, then at first visit; otherwise at second visit when short stature and low or low-normal height velocity is confirmed, you may consider initial evaluation: IGF-1 and IGFBP3 (to screen for growth hormone deficiency), TSH, karyotype in girls (to screen for Turner syndrome) and a bone age X-ray. OR refer to endocrine clinic for workup there (except in cases where hypothyroidism is a possibility, the workup can be safely delayed till seen by endocrinology). 9. Other labs like celiac screen (GI symptoms, poor weight gain), CMP (suspicion of liver or kidney disease), CBC (suspicion of anemia) and so on should be considered on a case-by-case basis.		include: • Chief complaint, onset, frequency • Recent progress notes • Labs and imaging results • Other Diagnoses • Office notes with medications tried/failed in the past and any lab work that may have been obtained regarding this patient's problems.	• Please note that in most cases, idiopathic short stature is specifically excluded as a covered diagnosis by insurance plans.
<u>Causes</u> • Causes (roughly in order of prevalence in clinical practice) include: • Constitutional delay of growth and puberty				

• Idiopathic short stature • Familial short stature • Turner syndrome in girls • Malnutrition (GI disease, poor intake, ADHD meds) • Failure of catch-up growth in SGA infants • Hypothyroidism • Growth hormone deficiency • Other syndromic and genetic causes of short stature • Drug exposure (systemic steroids, rarely high potency inhaled steroids at high doses) • Undiagnosed severe systemic illness (kidney disease, congenital heart disease, cystic fibrosis etc)			