

# CT Children's CLASP Guideline

## Early Onset Pubic Hair

### INTRODUCTION

**Premature adrenarche (PA)** is the early onset of pubic hair, body odor, and/or axillary hair in girls less than 8 years of age and boys less than 9 years that is associated with increasing levels of adrenal androgens within the pubertal range. **Premature pubarche (PP)** is when children have the early onset of hair and/or body odor but do not have elevated androgen levels. The aim of this guideline is to help providers in distinguishing those children who have PA or PP from those in whom there is a concern for a more serious and rare condition, such as late onset congenital adrenal hyperplasia (CAH) or virilizing tumors (adrenal or gonadal), which would require treatment. There is no accelerated growth velocity in either PA or PP. This contrasts with patients who have one of these other rare and serious conditions, where there will often be rapid virilization *and* accelerated linear growth velocity.

Idiopathic PA is more commonly observed in girls by a ratio of 9:1. Although PA may be largely a benign condition for many patients, newer studies have linked PA with higher risk of functional hyperandrogenism, polycystic ovarian syndrome, insulin resistance, Type II diabetes, and metabolic syndrome for some patients. Early identification and education of healthy lifestyle choices are encouraged.

### INITIAL EVALUATION AND MANAGEMENT

#### INITIAL EVALUATION:

- **Careful review of the growth chart and calculation of the growth rate**
  - Linear growth rate in PA and PP is within 2.5 SDs of normal without evidence of a linear growth spurt
- **History and physical exam**
  - Should include chronologic details of the onset of the changes noted and sexual maturity staging (see **Clinician Guide: Sexual Maturity Staging**)
  - Assess for rapid virilization (e.g., rapid increase in pubertal hair growth, new acne) *and* accelerated linear growth velocity
    - May indicate rare conditions such as late onset congenital adrenal hyperplasia (CAH), virilizing adrenal or gonadal tumors, or exogenous exposure to androgens
  - Family history of precocious puberty, congenital adrenal hyperplasia, hirsutism/acne, polycystic ovarian syndrome, Type II diabetes, or early cardiovascular disease
- **Girls 8 years of age/boys 9 years of age:**
  - No laboratory evaluation needed unless there are concerns for rapid virilization, rapid height acceleration, and/or rapid pubertal advancement during the observational period

- **Laboratory evaluation:**
  - Indicated for:
    - Girls and boys **with** rapid virilization, rapid height acceleration, and/or rapid pubertal advancement
  - Fasting 8 AM levels of DHEA-S, total testosterone, and 17-hydroxyprogesterone
  - If there is evidence on exam of true precocious puberty (breast development in girls or testicular enlargement in boys):
    - Obtain Pediatric FSH/LH for both boys and girls
    - Add estradiol ultra-sensitive measurement for girls
  - \*Interpretation of laboratory values in those with PP or PA:
    - PP: normal DHEA-S level and total testosterone level <20 ng/dL
    - PA: DHEA-S level of 40-150 mcg/dL and total testosterone level <20 ng/dL
  - Since radiologists interpret bone ages (BAs) differently than pediatric endocrinologists and BA measurements are often advanced in children with PA, we DO NOT recommend obtaining a BA as part of the initial evaluation. The results of the recommended basal hormone levels will suffice to distinguish children who need further evaluation by a pediatric endocrinologist.

#### INITIAL MANAGEMENT:

- For children with BMI >85<sup>th</sup> percentile, counseling on healthy lifestyle and obesity prevention (see **Obesity & Screening for Co-Morbidities CLASP tool**)
- **All children less than 3 years of age:**
  - Refer to Endocrine (see **When to Refer**)
- **Girls between 4-7.99 years of age/boys 4 – 8.99 years of age:**
  - If labs are checked and are normal, clinical monitoring is appropriate
  - If laboratory results consistent with diagnosis of PP or PA, patient to be followed clinically with primary care provider every 6 months
    - Monitor for evidence of height acceleration, precocious puberty (i.e., breast development in girls, testicular enlargement in boys) and/or rapid virilization
  - Offer education to patients and families (see **Family Handout: Premature Adrenarche**)
- **Girls 8 years of age/boys 9 years of age:**
  - These are the normal ages for children to develop adrenarche. Give reassurance
  - Carefully observe for signs of rapid virilization, height acceleration and/or rapid pubertal progression (i.e., significant change in breast development in girls, or rapid testicular enlargement in boys) for 4-6 months

<p><b>WHEN TO REFER</b></p>	<p><b>All children less than 3 years of age:</b></p> <ul style="list-style-type: none"> <li>• Routine referral to Endocrinology</li> </ul> <p><b>Girls between 3-7.99 years of age/boys 3 – 8.99 years of age:</b></p> <ul style="list-style-type: none"> <li>• Routine referral to Endocrinology if: <ul style="list-style-type: none"> <li>○ laboratory results above range for PA, or</li> <li>○ there are concerns for rapid virilization, rapid height acceleration, and/or rapid pubertal advancement</li> </ul> </li> </ul> <p><b>Girls 8 years of age/boys 9 years of age:</b></p> <ul style="list-style-type: none"> <li>• Routine referral to Endocrinology is only recommended for patients for whom there are concerns for rapid virilization, rapid height acceleration, and/or rapid pubertal advancement</li> </ul> <p><b>If patient with a BMI <math>\geq</math>95<sup>th</sup> percentile:</b></p> <ul style="list-style-type: none"> <li>• Refer to Weight Management Program via the <b>Obesity &amp; Screening for Co-Morbidities Tool</b></li> </ul>
<p><b>HOW TO REFER</b></p>	<p><b>Referral to Endocrinology via CT Children’s One Call Access Center</b>  <b>Phone:</b> 833.733.7669 <b>Fax:</b> 833.226.2329</p> <p>For more information on how to place referrals to Connecticut Children’s, click <a href="#">here</a>.</p> <p><b>Information to be included with the referral:</b></p> <ul style="list-style-type: none"> <li>▪ Notes from the initial and follow-up visits with the PCP</li> <li>▪ Complete growth charts</li> <li>▪ Relevant laboratory and diagnostic studies</li> </ul>
<p><b>WHAT TO EXPECT</b></p>	<p><b>What to expect from CT Children’s Visit:</b></p> <ul style="list-style-type: none"> <li>▪ History, physical exam</li> <li>▪ Evaluation of prior laboratory testing and growth chart</li> <li>▪ Additional labs, if appropriate</li> <li>▪ Bone Age obtained and read by pediatric endocrinologist, if appropriate</li> <li>▪ Other imaging studies, if appropriate</li> <li>▪ Initiation of treatment, if appropriate</li> <li>▪ Comprehensive patient education</li> </ul>