# Pediatric Endocrinology Referral Guidelines

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Fax ALL pertinent medical records to (312) 996-8218
To speak with an On-Call MD or NP CHUI Children’s Specialist in Endocrinology, please call: Endocrinology On-Call Phone* Day: (312) 996-1795 or After Hours: (312) 649-2639
# Pediatric Endocrinology Referral Guidelines

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## 1a) Congenital Hypothyroidism (Neonate)  [ICD-9 Code: 243.0]

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<th>Clinical Findings</th>
<th>Referral Timeframe</th>
<th>Pre-Referral Workup</th>
<th>Referral Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Neonate with abnormal Newborn Screening Test</td>
<td><strong>URGENT:</strong></td>
<td><strong>Confirmatory TSH, Total T4 or Free T4</strong></td>
<td>• All clinical notes and laboratory results including growth chart</td>
</tr>
<tr>
<td></td>
<td>Call NP/MD on-call to discuss and start treatment.</td>
<td></td>
<td><strong>On-Call Phone #</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Day:</strong> (312) 996-1795</td>
<td></td>
<td><strong>Day:</strong> (312) 649-2639</td>
</tr>
<tr>
<td></td>
<td><strong>After Hours:</strong> (312) 649-2639</td>
<td></td>
<td><strong>After Hours:</strong> (312) 649-2639</td>
</tr>
</tbody>
</table>

## 1b) Congenital Hypothyroidism (Child)  [ICD-9 Code: 243.0]

<table>
<thead>
<tr>
<th>Clinical Findings</th>
<th>Referral Timeframe</th>
<th>Pre-Referral Workup</th>
<th>Referral Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Known or treated child with abnormal thyroid function test</td>
<td><strong>First available appointment, but call the NP/MD on-call to begin therapy until patient can be seen.</strong></td>
<td><strong>Current TSH, Total or Free T4</strong></td>
<td>• All clinical notes and laboratory results including growth chart</td>
</tr>
</tbody>
</table>
# Pediatric Endocrinology Referral Guidelines

## 2a) Acquired Hypothyroidism  [ICD-9 Code: 244.8]

### Clinical Findings
- Elevated TSH
- Low Total T4 or Free T4

### Referral Timeframe
- First available appointment, but call the NP/MD on-call to begin therapy until patient can be seen

### Pre-ReReferral Workup
- Current TSH, Total T4 or Free T4, Anti-Thyroglobulin Antibody and Anti-TPO Antibody
- If TSH is abnormal but <10 uIU/ml and the Total T4 or Free T4 are normal, obtain thyroid antibodies and repeat the TSH, Total T4 or Free T4 in 2-3 months. If TSH rising and antibodies are positive, refer
- Thyroid ultrasound is unnecessary unless the gland is asymmetric or nodules are palpable

### Referral Requirements
- All clinical notes and laboratory records including growth chart

## 2b) Autoimmune Thyroiditis/Hypothyroidism  [ICD-9 Code: 245.2]

### Clinical Findings
- Low to Low normal TSH with low Total T4 or Free T4
- History of traumatic brain injury, midline facial defects, brain irradiation, hypoxic brain injury

### Referral Timeframe
- **URGENT:**
  - Call NP/MD on-call to discuss and start treatment.
  - On-Call Phone #
  - Day: (312) 996-1795
  - After Hours: 312-649-2639
- After discussion with NP/MD on-call, may be asked to obtain MRI of the brain and pituitary with and without contrast

### Pre-ReReferral Workup
- Confirmatory TSH, Total T4 or Free T4
- Consider repeat of labs prior to referral to assure validity

### Referral Requirements
- All clinical notes and laboratory records including growth chart

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# Pediatric Endocrinology Referral Guidelines

## 4a) Acquired Hyperthyroidism  [ICD-9 Code: 242.9]

### Clinical Findings
- Hypertension
- Tachycardia
- Goiter
- Exophthalmos
- TSH < 0.1 uU/ml
- Elevated Total T4 or Free T4,T3

### Referral Timeframe
- **URGENT:**
  - Call NP/MD on-call to discuss and start treatment.
  - On-Call Phone #
  - Day: (312) 996-1795
  - After Hours: (312) 649-2639

### Pre-Referral Workup
- Current TSH, Total T4 or Free T4, Total T3, Thyroid Stimulating Immunoglobulin (TSI), Thyrotrphin Binding Immunoglobulin (TBII), Anti-Thyroglobulin Antibody, Anti-TPO Antibody

### Referral Requirements
- All clinical notes and laboratory records including growth chart

## 4b) Autoimmune Hyperthyroidism (Grave's Disease)  [ICD-9 Code: 242.0]

### Clinical Findings

### Referral Timeframe

### Pre-Referral Workup

### Referral Requirements

## 5) Neonatal Hyperthyroidism  [ICD-9 Code: 775.3]

### Clinical Findings
- Maternal history of Graves Disease
- Hypertension
- Tachycardia
- Failure to Thrive
- Low TSH
- Elevated Total T4 or Free T4

### Referral Timeframe
- **URGENT:**
  - Call NP/MD on-call to discuss and start treatment.
  - On-Call Phone #
  - Day: (312) 996-1795
  - After Hours: (312) 649-2639

### Pre-Referral Workup
- TSH, Total T4 or Free T4, Total T3, Thyroid Stimulating Immunoglobulin (TSI), Thyrotrphin-Binding Immunoglobulin (TBII)
- If possible, check maternal Anti-TPO Antibody, Anti-Thyroglobulin Antibody and TSI/TBII

### Referral Requirements
- All clinical notes and laboratory records including growth chart
# Pediatric Endocrinology Referral Guidelines

## 6) Goiter [ICD-9 Code: 240.9]

<table>
<thead>
<tr>
<th>Clinical Findings</th>
<th>Referral Timeframe</th>
<th>Pre-Referral Workup</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>URGENT REFERRAL IF:</strong></td>
<td><strong>URGENT:</strong> Call NP/MD on-call to discuss and start treatment. If symptomatic, call NP/MD on-call to discuss On-Call Phone # Day: (312) 996-1795 After Hours: (312) 649-2639</td>
<td><strong>If asymmetric, enlarging in size, or palpable node, obtain thyroid ultrasound</strong>&lt;br&gt;<strong>Current TSH, Total T4 or Free T4, Anti-Thyroglobulin Antibodies and Anti-TPO Antibodies</strong></td>
<td><strong>All clinical notes and laboratory records including growth chart</strong></td>
</tr>
<tr>
<td>• Asymmetric gland</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>• Increasing size or causing discomfort</td>
<td></td>
<td></td>
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<tr>
<td>• Abnormal thyroid biopsy</td>
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<td></td>
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<tr>
<td><strong>ROUTINE REFERRAL IF:</strong></td>
<td><strong>If questions, call NP/MD on-call to discuss</strong></td>
<td><strong>Current TSH, Total T4 or Free T4, Anti-Thyroglobulin Antibodies and Anti-TPO Antibodies</strong></td>
<td><strong>All clinical notes and laboratory records including growth chart</strong>&lt;br&gt;<strong>Imagins studies</strong>&lt;br&gt;<strong>If palpable nodule, see Thyroid Nodule section</strong>&lt;br&gt;<strong>If abnormal thyroid function tests, see Hypothyroid or Hyperthyroid section</strong></td>
</tr>
<tr>
<td>• Abnormal TSH, Total T4, or Free T4</td>
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<td></td>
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<tr>
<td>• Abnormal thyroid antibodies</td>
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<tr>
<td>• Abnormal thyroid ultrasound showing goiter, multiple small nodules</td>
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# Pediatric Endocrinology Referral Guidelines

## 7) Thyroid Nodule  [ICD-9 Code: 243.0]

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<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>URGENT REFERRAL IF:</strong></td>
<td></td>
<td>Current TSH, Total T4 or Free T4, Anti-Thyroglobulin Antibodies and Anti-TPO Antibodies</td>
<td>All clinical notes, laboratory or ultrasound results and growth chart</td>
</tr>
<tr>
<td>Palpable nodule &gt;1.0 cm</td>
<td>➤ <strong>URGENT:</strong> Call NP/MD on-call to discuss and start treatment. If symptomatic, call NP/MD on-call to discuss On-Call Phone #: Day: (312) 996-1795 After Hours: (312) 649-2639</td>
<td>➤ Calcitonin if recommended by CHUI Children's Specialist in Endocrinology</td>
<td>➤ Fine Needle Aspiration may be indicated</td>
</tr>
<tr>
<td>Family history of thyroid cancer or MEN (multiple endocrine neoplasia)</td>
<td></td>
<td>➤ Thyroid Ultrasound</td>
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<tr>
<td>Increasing size of nodule</td>
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</tr>
</tbody>
</table>

| ROUTINE REFERRAL IF: | | Current TSH, Total T4 or Free T4, Anti-Thyroglobulin Antibodies and Anti-TPO Antibodies | All clinical notes, laboratory or ultrasound results and growth chart |
| Non-palpable nodule < 1.0 cm | ➤ If concern for thyroid cancer, please call NP/MD on-call to discuss | ➤ Calcitonin if recommended by CHUI Children's Specialist in Endocrinology | |
| Nodule on thyroid ultrasound | | ➤ Thyroid Ultrasound | |

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Pediatric Endocrinology Referral Guidelines

Thyroid: Key Facts to Remember

Facts to Remember:

- We often see slight elevations in TSH (5-10 uIU/ml) in obese children secondary to metabolic syndrome and obesity. No endocrine referral is indicated unless the thyroid antibodies are positive.

- Alopecia or hair loss with normal TSH, Total T4 or Free T4 does not indicated an endocrinopathy and referral is unnecessary.

- Obtaining a T3 Uptake or Free T4 Index is not usually helpful. Instead it should be a Total T3 level or Free T4.

- Children with Trisomy 21 often have mildly elevated TSH levels (hypothyrotropenemia) with normal Total T4 or Free T4. Generally referral is not needed unless there are positive thyroid antibodies, or rising TSH. Call with questions.

- Children with positive thyroid antibodies but normal thyroid function tests may never go on to develop hypothyroidism. The thyroid function tests just need to be followed periodically and if abnormal referral is appropriate.

- Thyroid Nodules: There is a rising incidence of thyroid nodules in the pediatric population. Small nodules (<1.0 cm) with thyroid antibodies are less concerning. Solitary nodules or nodules >1.0 cm require an urgent referral to r/o thyroid cancer. A fine needle aspiration may be indicated.
Pediatric Endocrinology Referral Guidelines

8a) Diabetes Mellitus - Type 1 [ICD-9 Code: 250.03] Type 2 [ICD-9 Code: 250.02]  
8b) Hyperglycemia [ICD-9 Code: 790.29]

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Increased thirst and urination</td>
<td><strong>URGENT:</strong> Call NP/MD on-call to discuss and start treatment. If symptomatic, call Emergency Dept. (911) On-Call Phone # Day: (312) 996-1795 After Hours: (312) 649-2639</td>
<td>Finger Stick Blood Glucose Urinalysis for KETONES and glucose If NOT acutely ill, consider STAT chemistry panel to determine disposition (direct admit vs. ER)</td>
<td>IF fasting BG over 126 mg/dl or a random BG 2 hour or OGTT over 200 mg/dl, then call is URGENT FOR ALL NEW DIAGNOSES of Diabetes Mellitus, please inform phone concierge call is URGENT DKA is likely if patient is vomiting, lethargic or abnormal respirations. Send immediately to Emergency Department AND notify Endocrine MD or NP on-call.</td>
</tr>
</tbody>
</table>

9a) Impaired Glucose Tolerance [ICD-9 Code: 790.22]  
9b) Impaired Fasting Glucose [ICD-9 Code: 790.21] (see pre-referral workup section for definitions)

<table>
<thead>
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<tbody>
<tr>
<td>Obesity (BMI &gt;97th %ile)</td>
<td><strong>Routine:</strong> First available appointment</td>
<td>Impaired Fasting Blood Glucose (100-125 mg/dl) Impaired 2 hour OGTT (140-199 mg/dl) HgA1C (abnormal &gt;6%) 2 hour OGTT (8 years and over) - 1.75 grams of glucose/kg to max of 75 grams Renal Function and Liver Function tests</td>
<td>Growth chart Laboratory results Recent clinical notes</td>
</tr>
</tbody>
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Pediatric Endocrinology Referral Guidelines

10a) Morbid Obesity [ICD-9 Code: 278.01] (If Early Onset, e.g. before age 5, may be genetic condition)
10b) Acanthosis Nigricans [ICD-9 Code: 701.2]

Clinical Findings
- Obesity (BMI >97thile)
- Darkening & Thickening of skin around neck, elbow, waist, knuckles, axilla
- Irregular Menses

Referral Timeframe
- Routine:
  - Referrals will be evaluated

Pre-Referral Workup
- HgA1C (abnormal if >6%)
- Fasting Blood Glucose (Abnl 100-125)
- 2 hour OGTT (abnl 2 hour level above 140 mg/dl). FOR 8 years and over, use 1.75 grams of glucose/kg to max of 75 grams

Referral Requirements
- Growth chart
- Laboratory results
- Recent clinical notes

(If Obesity starts after age 5, and no lab abnormalities, then refer out to community weight management programs.

*NO ENDOCRINOLOGY REFERRAL NEEDED*)

Diabetes: Key Facts to Remember

Facts to Remember:
- Signs of DKA warrant an urgent call and immediate referral to Emergency Department (call 911)
  - Vomiting, Deep Respirations, Altered Level of Consciousness - Signs of Diabetic Ketoacidosis - Refer to Emergency Department (911) with call to PICU/Endocrine - Day: 312 996-1795 or After Hours: (312) 649-2639
  - Large Ketones in Urine
  - CO2 <15 on chemistry panel
- If Diabetes is clinically apparent, then a separate fasting glucose or 2 hour OGTT are not required, please call immediately.
- Obesity before age 5 is considered Early Onset and may indicate a genetic cause of the obesity.

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# Pediatric Endocrinology Referral Guidelines

## 11) Short Stature [ICD-9 Code: 783.43]

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</tr>
</thead>
<tbody>
<tr>
<td>• Poor height velocity or crossing percentiles AND associated with severe headaches and/or blurry vision</td>
<td><strong>URGENT:</strong> Call NP/MD on-call to discuss and start treatment. On-Call Phone #: Day: (312) 996-1795 After Hours: (312) 649-2639</td>
<td>▶ May need lab tests as below but please call to discuss. ▶ May need urgent MRI of brain and pituitary to rule out tumor.</td>
<td>▶ All clinical notes and laboratory results including growth chart</td>
</tr>
<tr>
<td>• Current Height less than 3rd percentile for age or</td>
<td><strong>Routine:</strong> likely will be seen in next 3 to 4 months</td>
<td>▶ Evaluation of mid-parental target height ▶ IGF-I (Insulin like growth factor-I)- QUEST test code 839, Esoterix code 500282 ▶ IGF-BP3 (Insulin like growth factor binding protein 3) QUEST test code 34458, Esoterix code 500281 ▶ TSH, Free T4, CBC, Panel 18, Urinalysis ▶ Celiac screening (Anti-Tissue Transglutaminase -IgA and IgG), IgA level QUEST test codes 11073 and 539 ▶ Bone age x-ray if more than 2 years of age ▶ Please have parent bring CD or film of bone age x-ray to appointment ▶ For females, consider karyotype for Turner syndrome</td>
<td>▶ Growth chart ▶ Thyroid function tests ▶ Laboratory results ▶ Bone age results - Please have parent bring a copy of bone age x-ray (CD or film) to visit ▶ Relevant clinical notes ▶ All non-urgent patients referred for short stature will be sent to a growth seminar prior to Endocrine visit</td>
</tr>
<tr>
<td>• Current Height greater than 3rd percentile but still concern for growth</td>
<td><strong>May NOT need referral based on initial evaluation</strong></td>
<td>▶ Must screen with TSH level at minimum. ▶ Consider above laboratory testing and bone age x-ray if &gt;2 years old depending on symptoms. ▶ Evaluation of mid-parental target height. (MPTH) **See page 10 for MPTH equation.</td>
<td>▶ Growth chart ▶ Thyroid function tests ▶ Laboratory results ▶ Bone age results - Please have parent bring a copy of bone age x-ray (CD or film) to visit ▶ Relevant clinical notes</td>
</tr>
</tbody>
</table>

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### Pediatric Endocrinology Referral Guidelines

#### 12) Failure to Thrive  
[ICD-9 Code: 783.41]

<table>
<thead>
<tr>
<th>Clinical Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypoglycemia and Failure to Thrive</td>
</tr>
<tr>
<td>Height less than 3rd percentile and weight less than 3rd percentile</td>
</tr>
<tr>
<td>Height 3rd percentile or greater, but weight less than 3rd percentile</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Referral Timeframe</th>
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<tbody>
<tr>
<td><strong>URGENT:</strong> Call NP/MD on-call to discuss and start treatment.</td>
</tr>
<tr>
<td>On-Call Phone # Day: (312) 996-1795</td>
</tr>
<tr>
<td>After Hours: (312) 649-2639</td>
</tr>
<tr>
<td>Routine- likely will be seen in next 3 to 4 months</td>
</tr>
<tr>
<td>May NOT need referral based on initial evaluation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pre-Referral Workup</th>
</tr>
</thead>
<tbody>
<tr>
<td>May need same lab tests as below, but please call to discuss.</td>
</tr>
<tr>
<td>IGF-BP3 (Insulin like growth factor binding protein 3) QUEST test code 34458, Esoterix code 500281</td>
</tr>
<tr>
<td>TSH, Free T4, CBC, CMP.</td>
</tr>
<tr>
<td>Celiac screening (Anti-Tissue Transglutaminase - IgA and IgG), IgA level QUEST test codes 11073 and 539</td>
</tr>
<tr>
<td>Consider evaluation by Gastroenterology (312) 996-7416</td>
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<thead>
<tr>
<th>Referral Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>All clinical notes and laboratory results including growth chart</td>
</tr>
<tr>
<td>Growth chart</td>
</tr>
<tr>
<td>Thyroid function tests</td>
</tr>
<tr>
<td>Laboratory results</td>
</tr>
<tr>
<td>Bone age results - Please have parent bring a copy of bone age x-ray (CD or film) to visit</td>
</tr>
<tr>
<td>Relevant clinical notes</td>
</tr>
<tr>
<td>Please call NP/MD on-call for any questions.</td>
</tr>
</tbody>
</table>

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Pediatric Endocrinology Referral Guidelines

Growth: Key Facts to Remember

When to worry:

- Poor height velocity associated with severe headaches and/or blurry vision may be a brain tumor.
- If a child is short and in puberty, this may increase the urgency of referral.
- Short stature is more concerning if a child has a predicted height that is more than 4 inches shorter than expected for family

Facts to Remember:

- Constitutional delay is the MOST common cause of short stature.
- FDA criteria for growth hormone treatment in idiopathic short stature is a predicted adult height of less than 4'11” for girls or 5'4” for boys
- Random growth hormone levels are NOT useful, please measure IGF-I and IGF-BP3 instead.
- If the bone age shows fused growth plates ≥ 14 in girls or ≥ 16 in boys, then NO Endocrine referral is needed. There are NO treatment options to increase height once growth plates are fused.
- Consider genetics referral if dysmorphic features are present.

(Growth: Key Facts to Remember continued on next page)
Growth: Key Facts to Remember

Facts to Remember (continued):

- Midparental target height (MPTH) equation is DIFFERENT for boys and girls.
  - $MPTH(boys) = [(mom's\ height + 5\ in) + (dad's\ height)] \div 2$
  - $MPTH(girls) = [(mom's\ height) + (dad's\ height - 5\ in)] \div 2$
  - MPTH is the average genetic target but normal children can be 2 to 4 inches shorter or taller than their target.

- NOTE: All non-urgent patients referred for short stature will be sent to a CHOC growth seminar.

- Key to evaluation of growth requires comparison of weight and length/height curves.

- If weight is decreasing more than length/height, refer to gastroenterology PRIOR to Endocrinology.

- IGF-1 (Insulin like growth factor-1) levels will often be low in patients with low weight and may NOT be indicative of growth hormone deficiency.
## Pediatric Endocrinology Referral Guidelines

### 13a) Precocious Puberty/Premature Thelarche (Girls)  [ICD-9 Code: 259.1]

<table>
<thead>
<tr>
<th>Clinical Findings</th>
<th>Referral Timeframe</th>
<th>Pre-Referral Workup</th>
<th>Referral Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Girls &lt; 8 years</strong></td>
<td><strong>URGENT:</strong> Call NP/MD on-call to discuss and start treatment. On-Call Phone # Day: (312) 996-1795 After Hours: (312) 649-2639</td>
<td><strong>Bone age</strong></td>
<td><strong>Growth chart</strong></td>
</tr>
<tr>
<td>- Breast development <strong>with</strong> one or more of the following signs:</td>
<td></td>
<td><strong>TSH and T4 or Free T4 by dialysis</strong></td>
<td><strong>Bone age results - Please have parent bring a copy of film/CD to appointment.</strong></td>
</tr>
<tr>
<td>- Progressing over time</td>
<td></td>
<td><strong>Pediatric LH (Quest 36086, Esoterix 500234, Lab Corp 502286)</strong></td>
<td><strong>Lab results</strong></td>
</tr>
<tr>
<td>- Accelerated growth</td>
<td></td>
<td><strong>Pediatric FSH (Quest 36087, Esoterix 500192, LabCorp 502280)</strong></td>
<td><strong>Relevant clinical notes with physical examination including Tanner stage.</strong></td>
</tr>
<tr>
<td>- Vaginal bleeding</td>
<td></td>
<td><strong>Ultrasonative Estradiol (Quest 30289, Esoterix 500152, Lab Corp 500108)</strong></td>
<td></td>
</tr>
<tr>
<td>- Headaches and/or visual changes</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>- Multiple Café au lait spots &gt; 1.5 cm (possible McCune Albright Syndrome)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Girls 6 - 8 years</strong></td>
<td><strong>Routine</strong></td>
<td><strong>Same as above</strong></td>
<td><strong>Same as above</strong></td>
</tr>
<tr>
<td>- Breast development <strong>without</strong> the above signs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Girls 2 - 6 years</strong></td>
<td><strong>URGENT:</strong> Call NP/MD on-call to discuss and start treatment.</td>
<td><strong>Same as above</strong></td>
<td><strong>Same as above</strong></td>
</tr>
<tr>
<td>- Breast development <strong>without</strong> the above signs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Girls &lt; 2 years</strong></td>
<td><strong>May NOT need referral</strong></td>
<td><strong>None</strong></td>
<td><strong>Call Endocrine with any questions or concerns</strong></td>
</tr>
<tr>
<td>- Breast development <strong>without</strong> the above signs</td>
<td></td>
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</tbody>
</table>

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Pediatric Endocrinology Referral Guidelines

13b) Precocious Puberty (Boys)  [ICD-9 Code: 259.1]

Clinical Findings
Boys < 9 years
- Testicular enlargement (≥ 4 ml or > 2.5 cm)
- Penile enlargement

Referral Timeframe
- **URGENT:**
  - Call NP/MD on-call to discuss and start treatment.
  - **On-Call Phone #**
  - Day: (312) 996-1795
  - After Hours: (312) 649-2639

Pre-Referral Workup
- Confirmatory TSH, Total T4 or Free T4
- Bone age
- TSH and T4 or Free T4 by dialysis
- Pediatric LH (Quest 36086, Esoterix 500234, Lab Corp 502286)
- Pediatric FSH (Quest 36087, Esoterix 500192, LabCorp 502280)
- Pediatric Tesotosterone (Quest 15983, Esoterix 500286, Lab Corp 500159)

Referral Requirements
- Growth chart
- Bone age results- Please have parent bring a copy of film/CD to appointment.
- Lab results
- Relevant clinical notes with physical examination including Tanner stage.

Precocious Puberty: Key Facts to Remember

**Facts to Remember:**
- Standard LH, FSH, Estradiol or Testosterone assays are not reliable for children, please use test codes provided.
- Consider imaging testing such as pelvic ultrasound or brain and pituitary MRI if warranted.
- In benign premature thelarche, the nipples are not usually dark or enlarged as seen in precocious puberty.
- Fine downy and non-pigmented short hair is not considered secondary sexual pubic hair.
- Pubic hair on the suprapubic area is more indicative of precocious puberty than hair on the labial majora or scrotum.

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# Pediatric Endocrinology Referral Guidelines

## 14a) Premature Adrenarche (Girls)  [ICD-9 Code: 255.2]

### Clinical Findings
- Girls < 7 years with one or more of the following signs: pubic hair, axillary hair, body odor, clitoral enlargement, but NO breast development
- Girls 7 - 8 years with one or more of the above signs AND accelerated growth or clitoral enlargement
- Girls 7 - 8 years with one or more of the above signs, but NO accelerated growth or clitoral enlargement

### Referral Timeframe
- **URGENT:**
  - Call NP/MD on-call to discuss and start treatment.
  - On-Call Phone #
    - Day: (312) 996-1795
    - After Hours: (312) 649-2639

### Pre-Referral Workup
- Bone age
- 17-Hydroxyprogesterone (Quest 17180, Esoterix 500270, LabCorp 500163)
- Pediatric Testosterone (Quest 15983, Esoterix 500286, Lab Corp 500159)
- DHEAS (Quest 402, Esoterix 500116, LabCorp 500156)

### Referral Requirements
- Growth chart
- Bone age results - Please have parent bring a copy of film/CD to appointment.
- Lab results
- Relevant clinical notes with physical examination including Tanner stage

### Referral Requirements
- Same as above
### Pediatric Endocrinology Referral Guidelines

#### 14b) Premature Adrenarche (Boys)  [ICD-9 Code: 255.2]

<table>
<thead>
<tr>
<th>clinical findings</th>
<th>Referral Timeframe</th>
<th>Pre-Referral Workup</th>
<th>Referral Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys &lt; 7 years with one or more of the following signs: pubic hair, axillary hair,</td>
<td><strong>URGENT:</strong> Call NP/MD on-call to discuss and start</td>
<td><strong>Bone age</strong></td>
<td><strong>Growht chart</strong></td>
</tr>
<tr>
<td>body odor, penile enlargement, accelerated growth; but NO testicular enlargement</td>
<td>treatment.</td>
<td></td>
<td>**Bone age results- Please have parent bring a copy of</td>
</tr>
<tr>
<td>(&lt;4 ml or &lt;2.5 cm)</td>
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<td></td>
<td>film/CD to appointment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Lab results</strong></td>
</tr>
<tr>
<td></td>
<td><strong>On-Call Phone # Day: (312) 996-1795</strong></td>
<td></td>
<td>**Relevant clinical notes with physical examination</td>
</tr>
<tr>
<td></td>
<td><strong>After Hours: (312) 649-2639</strong></td>
<td></td>
<td>including Tanner stage**</td>
</tr>
<tr>
<td>Boys 7 - 9 years with one or more of the above signs AND accelerated growth</td>
<td><strong>URGENT:</strong> Call NP/MD on-call to discuss and start</td>
<td><strong>Same as above</strong></td>
<td><strong>Same as above</strong></td>
</tr>
<tr>
<td>Boys 7 - 8 years with one or more of the above signs, but NO accelerated growth</td>
<td>treatment.</td>
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<tr>
<td></td>
<td><strong>Routine</strong></td>
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# Pediatric Endocrinology Referral Guidelines

## 15) Delayed Puberty [ICD-9 Code: 259.0]

<table>
<thead>
<tr>
<th>Clinical Findings</th>
<th>Referral Timeframe</th>
<th>Pre-Referral Workup</th>
<th>Referral Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Boys</strong>: no testicular enlargement (&lt;4 ml or &lt;2.5 cm) by 14 years of age</td>
<td><strong>Routine</strong></td>
<td><strong>Bone age</strong></td>
<td><strong>Growth chart</strong></td>
</tr>
<tr>
<td><strong>Girls</strong>: no breast development by 13 years of age or no menses by 15 years of age</td>
<td></td>
<td><strong>TSH and T4 or Free T4 by dialysis</strong></td>
<td><strong>Bone age results - Please have parent bring a copy of film/CD to appointment</strong></td>
</tr>
<tr>
<td>Note: Girls with no menses by 15 years and notable short stature, consider Turner Syndrome.</td>
<td></td>
<td><strong>Pediatric LH (Quest 36086, Esoterix 500234, Lab Corp 502286)</strong></td>
<td><strong>Lab results</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Pediatric FSH (Quest 36087, Esoterix 500192, LabCorp 502280)</strong></td>
<td><strong>Relevant clinical notes with physical examination including Tanner stage</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Boys</strong>: Pediatric Tesotosterone (Quest 15983, Esoterix 500286, Lab Corp 500159)**</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Girls</strong>: Ultrasensitive Estradiol (Quest 30289, Esoterix 500152, Lab Corp 500108)**</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Karyotype (if suspect Turner Syndrome)</strong></td>
<td></td>
</tr>
</tbody>
</table>

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Sources used in development of these Referral Guidelines:

- Kappy MS, Allen DB, Geffner ME ed. Pediatric Practice Endocrinology, McGraw Hill Medical. 2010

- Styne DM, Pediatric Endocrinology. Lippincott Williams and Wilkins, 2004

