Endocrine Referral Algorithm: Precocious Puberty (Breast Development/Testicular Enlargement)

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Girls: Under 8 yr of age AND breast development Tanner stage ≥2
Boys: Under 9 yr of age AND testicular enlargement ≥4 cc or >2 cm length (Tanner stage ≥2)

< 3 years of age?

Yes

Headaches and/or visual changes OR Multiple café au-lait spots

No

Bone age X-ray result

Yes

Bone age advanced
(Bone age > Chronological age by 2 years)

Refer to Endocrine

Yes

Bone age = Chronological age
(within 2 years of chronological age)

Growth velocity is >8 cm/yr* or abnormal labs**?

No

Follow up with PCP in 4 months for height recheck or check labs**

Yes

Refer to Endocrine - Urgent appointment
(PCP to complete bone age X-ray prior to the appointment in Endocrine)

Not precocious puberty. No referral to Endocrine needed

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**AM Labs (8 to 9 a.m.):
- Ultrasensitive pediatric LH
- FSH (pediatric)
- Estradiol (pediatric) or Total testosterone by LC/MS
- TSH, free T4

* Growth velocity can be calculated based on 4 or 6 months of linear growth.
  - Centimeters growth in 4 months x 3 = expected growth velocity in a year
  - Centimeters growth in 6 months x 2 = expected growth velocity in a year
Referral Algorithm: Precocious Puberty (Hair Development)

**Premature pubarche/adrenarche**

Girls: Under 8 yr of age or Boys: Under 9 yr of age with pubic hair (Tanner stage ≥2)

- **Yes**
  - < 3 years of age?
  - **Yes**
  - Bone age X-ray result
  - No
- **No**
  - Bone age advanced (Bone age > Chronological age by 2 years)
  - Refer to Endocrine

Bone Age = Chronological age (within 2 years of chronological age)

- **Yes**
  - Axillary hair
  - OR
  - Clitoral or penile enlargement
  - OR
  - Accelerated height velocity (>8 cm/yr)*
  - OR
  - Abnormal labs**
  - Follow up with PCP in 4 months for height recheck or check labs**

- **No**

**AM Labs (8 to 9 a.m.):**
- 17-hydroxyprogesterone (17 OHP)
- Total testosterone by LC/MS
- DHEA-S

* Growth velocity can be calculated based on 4 or 6 months of linear growth.
  - Centimeters growth in 4 months x 3 = expected growth velocity in a year
  - Centimeters growth in 6 months x 2 = expected growth velocity in a year

Updated 11-2021
Referral Algorithm: Precocious Puberty (Vaginal Bleeding/Spotting)

*Premature menarche*

- **<10 years of age** (patient is 9 years of age or younger)
  - Yes
    - Refer to Endocrinology
      * (PCP to complete bone age prior to appointment)*
  - No
    - ≥ 10 years of age AND < 1 year from breast development to menses or breasts are underdeveloped
      - Yes
        - Call Provider-to-Provider Line at 206-987-7777 prior to scheduling
      - No
        - Not precocious puberty. Consider referring to Gynecology for menstrual suppression