Child With Suspected Sexual Precocity

Suggestive history and physical findings	Initial laboratory and/or radiologic work-up can include:	When to refer	Items useful for consultation	Additional information
Females before 8 yrs of age: **Estrogenic**: Breast development, vaginal discharge/bleeding **Adrenergic**: Pubic hair, axillary hair body odor, acne Males before 9 yrs of age: Testicular enlargement, pubic hair, axillary hair, body odor, acne For both sexes: Growth acceleration, exposure to exogenous hormones, history of brain injury or radiation, family history of early puberty, midline defects, severe hypothyroidism, café au lait macules, FH/history of neurofibromatosis Differential Diagnosis	**Radiological tests:** • Bone age **Blood tests:*** • LH • FSH • testosterone (males) • estradiol (females) • DHEAS • TSH • Free T4 *Pubertal laboratory tests should be obtained in the early AM using sensitive pediatric assays only Other tests to consider after consultation with Pediatric Endocrinologist: • 17-OH progesterone • androstenedione • Pelvic ultrasound • Brain MRI	**Urgent:** CNS abnormality such as headaches, seizures or visual changes, very elevated 17-OH progesterone; rapidly progressing puberty, very young age, initial presentation is vaginal bleeding Bone age greater than 2 SD above chronologic age; signs of rapid virilization **Routine:** Normal bone age, normal labs Find a Pediatric Endocrinologist	Previous growth data/growth charts Pertinent medical records Recent laboratory and radiologic studies (including actual copy of bone age)	Precocious Puberty: A Guide for Families Premature Adrenarche: A Guide for Families Premature Thelarche: A Guide for Families References

Differential diagnosis of sexual precocity

Gonadotropin-dependent sexual precocity

- Idiopathic (80% of cases in females, 10% of cases in males)
- CNS lesion
    - Hypothalamic Hamartoma
    - Other CNS tumors or lesions
- Genetic abnormality
    - Gain-of-function mutation of the G-protein-coupled kisspeptin-1 receptor (GPR54)
- Sex-steroid exposure causing bone age advancement

Gonadotropin-independent sexual precocity

- Normal variants
    - Premature thelarche
    - Premature adrenarche
- Neuroendocrine
    - LH/hCG excess
    - Hypothyroidism
- Adrenal
    - Congenital adrenal hyperplasia
    - Adrenal tumor
- Gonadal
    - McCune-Albright Syndrome
    - Leydig cell tumor
    - Ovarian tumor
    - Familial male-limited precocious puberty (testotoxicosis)

Suggested Reference and Additional Reading:

Gad B. Kletter, Karen O. Klein, Yolanda Y. Wong . A pediatrician's guide to central precocious puberty. *Clinical Pediatrics* 2015 May; 54(5):414-24

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