Familial male-limited precocious puberty

Albright syndrome

Gonadal or extragonadal tumors

Adrenal

- Congenital adrenal hyperplasia (CAH)
- Adenoma, carcinoma
- Glucocorticoid resistance

Exogenous sex hormones

Primary hypothyroidism

Incomplete Precocious Puberty

Premature thelarche

Premature menarche

Premature pubarche or adrenarche

Modified from Root AW: Precocious puberty, *Pediatr Rev* 21(1):10–19, 2000.

Isosexual precocious puberty is more common among girls than boys. Approximately 80% of children with precocious puberty have **central precocious puberty (CPP)**, in which pubertal development is activated by the hypothalamic gonadotropin-releasing hormone (GnRH) (Greiner and Kerrigan, 2006). This produces early maturation and development of the gonads with secretion of sex hormones, development of secondary sex characteristics, and sometimes production of mature sperm and ova (Li, Li, and Yang, 2014; Lee, Houk, and Ahmed, 2006). CPP may be the result of congenital anomalies; infectious, neoplastic, or traumatic insults to the central nervous system (CNS); or treatment of long-standing sex hormone exposure (Trivin, Couto-Silva, Sainte-Rose, et al, 2006).