data suggests that timing of puberty has not changed for children who are not overweight (Walvoord, 2010).

Normally, the hypothalamic-releasing factors stimulate secretion of the gonadotropic hormones from the anterior pituitary at the time of puberty. In boys, interstitial cell–stimulating hormone stimulates Leydig cells of the testes to secrete testosterone; in girls, FSH and LH stimulate the ovarian follicles to secrete estrogens (Nebesio and Eugster, 2007). This sequence of events is known as the **hypothalamic–pituitary–gonadal axis**. If for some reason the cycle undergoes premature activation, the child will display evidence of advanced or precocious puberty. Causes of precocious puberty are found in Box 28-4.

Box 28-4

Causes of Precocious Puberty

Central Precocious Puberty

Idiopathic, with or without hypothalamic hamartoma

Secondary

- Congenital anomalies
- Postinflammatory: Encephalitis, meningitis, abscess, granulomatous disease
- Radiotherapy
- Trauma
- Neoplasms

After effective treatment of long-standing pseudosexual precocity

Peripheral Precocious Puberty