Adolescent Health and Development

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Section A

Puberty
What Is Puberty?

- The physical changes that lead to . . .
  - The ability to have children
  - Establishment of adult appearance
  - Development of secondary sex characteristics
  - Development of adult physical capacities
Male Pubertal Development

- Occurs between 9-17 years

- Pattern of development
  - Penis, testes, pubic hair—early
  - Facial hair, height, voice changes—late
2nd Degree Sexual Development

Males

Height spurt
- 10.5-16
- 13.5-17

Penis
- 11-14.5
- 13.5-17

Testis
- 10.5-16
- 14.5-18

Pubic hair
- 2
- 3
- 4
- 5
- 10.5-16
- 14-18

Age in years

10 11 12 13 14 15 16 17 18 19

Apex strength spurt
Compared with Females, Male Development

- Occurs 18-24 months later
- Progresses slowly through middle-late adolescence
- Early changes are not often visible
2nd Degree Sexual Development

- **Females**
  - Height spurt: 9.5-14.5
  - Menarche: 10-16.5
  - Pubic hair: 8-13
  - Breast: 2-5

- **Age in years**
  - 8-14
  - 8-13
  - 9.5-14.5
  - 10-16.5
Status and stature are closely connected
Hypothalamic-Pituitary Axis

The Gonadostat

Hypothalamus
The Gonadostat

- Transynaptic excitatory inputs (e.g., nor-epinephrine, neuropeptide Y)
- GABA inhibitory regulation
- In production of neuroactive substances (e.g., prostaglandin E₂)

Hypothalamus → GnRH
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Hypothalamus

GnRH

Pituitary

LH
FSH
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Hypothalamus

GnRH

Pituitary

LH
FSH

Gonad (Testes/Ovary)

Gonad

Estrogen
Testosterone
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The Gonadostat

Hypothalamus

GnRH

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LH

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Gonad (Testes/Ovary)

Gonad

Estrogen

Testosterone

- 

+ 

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Factors that Influence the Onset of Puberty

- Genetics
- Social context
- Behavior
- Nutrition