Endocrine Control of Growth

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This lecture covers endocrine control of growth. The primary hormone that mediates growth is, unsurprisingly known as growth hormone[1]. This lecture covers the following pages in the textbook: 350-353 and 358-359 [2].

[1] sometimes refered to as somatorop(h)in, hGH, or when generated recombinantly rhGH

[2] E Widmaier, H. Raff, and K. Strang. *Vander's Human Physiology: The Mechanisms of Body Function.* McGraw-Hill Science/Engineering/Math, 13th edition, 2013. ISBN 0073378305

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Learning Objectives

For this lecture, the learning objectives are:

- List the hormones important for growth at key times in a person's life.
- Describe the functions of human growth hormone on growth (bones and soft tissues), and on metabolism, and the regulation of its secretion. Explain what 'rhGH' means.
- State the "dual effector hypothesis" for GH actions, and the relative roles of GH and IGF-1 in growth control.
- Describe the interactions among all the key growth-regulating hormones at key times of a person's life: in utero, neonatally, childhood, puberty, adulthood, and senescence.
- Describe the daily regulation of GH levels and the physiological relevance of these cycles.

There are several hormones that are involved in normal growth. The most important is Growth Hormone, but Insulin, Thyroid Hormones, Vitamin D and sex hormones are also very important. These are covered in separate lectures. Generally proper growth (length and mass increase) requires proper nutrition[3] and a good psychosocial environment.

[3] both macro- and micronutrients

References

E Widmaier, H. Raff, and K. Strang. *Vander's Human Physiology: The Mechanisms of Body Function.* McGraw-Hill Science/Engineering/Math, 13th edition, 2013. ISBN 0073378305.