

PITUITARY DWARFISM III

(PANHYPOPITUITARISM)

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- the anterior pituitary has different cell types that produce factors responsible for signaling hormones to be formed and released by endocrine glands leading to various biological effects
- thyrotropic cells
 - release thyroid stimulating hormone (TSH)
 - TSH signals thyroid follicular cells to produce thyroid hormone
 - thyroid hormone controls various functions including basal metabolic rate, growth, heat production and sweating
- somatotropic cells
 - release growth hormone (GH)
 - GH signals liver cells to produce insulin-like growth factor (IGF)
 - IGF controls especially bone, cartilage and muscle growth
 - GH also helps promote formation of blood sugar that is needed as a fuel during growth
- gonadotropic cells
 - release luteinizing hormone (LH) and follicle stimulating hormone (FSH)
 - LH signals testes to produce testosterone
 - LH in combination with FSH signals the ovaries to produce estrogen
 - testosterone and estrogen are necessary for normal sexual development at puberty in males and females, respectively
- corticotropic cells
 - release adrenocorticotrophic hormones (ACTH)
 - ACTH signals the adrenal glands to produce cortisol
 - cortisol is needed for response to stress by signaling the body to mobilize fuels as sugar and fat

