

pituitary gland	
Note	-PG hormones are released in pulsatile manner not continuous.
A. lobe	<b>GH</b> <b>Prolactin</b> <b>others</b>
P. lobe	<b>ADH</b> <b>Oxytocin</b>
GH	
Producer	Somatotrops
TC	All body, specially: <u>bones</u> and <u>skeletal muscles</u>
Causes	<ul style="list-style-type: none"> <li>-Pr synthesis (anabolism - inc muscles mass)</li> <li>-makes the body use <u>fat</u> as fuel (catabolism)</li> <li>-inc Ca absorbed from GIT</li> <li>-inc mineralization of bones (stronger)</li> <li>-kidneys retention of Na &amp; K</li> <li>-maintain the fun of panc</li> <li>-good stimulation of immune system</li> <li>-stimulate all organs growth except the CNS</li> </ul>
MOA	<ul style="list-style-type: none"> <li>-<u>direct</u> effect: act on surface receptors and causes effect</li> <li>-<u>indirect</u>: (more common), stimulates the release of <b>somatomedin</b> by organs (liver...) which will cause the effect wanted (bone &amp; cartilage growth) - (inc Pr synthesis in skeletal muscles)</li> </ul>
Effects duration	Long term <ul style="list-style-type: none"> <li>-indirectly promotes growth by <u>insulin-like growth factor</u> IGF</li> <li>-inc cells size &amp; mitosis</li> <li>-types of growth:-</li> <li><b>Linear:</b> elongation of long bones by calcification of epiphyseal cartilages, and causing the deposit of new cartilage that will be later on calcified again.</li> <li><b>Depositional:</b> proliferation of cells in cavities &amp; surfaces, thus inc thickness (in membranous bones only: skull, jaws...)</li> </ul>
	Short term <ul style="list-style-type: none"> <li>-direct metabolic effects:-</li> <li><b>Pr anabolism:</b> inc synthesis, &amp; AA transport into cells (causing Pr sparer- less catabolism)</li> <li><b>Fat catabolism:</b> conversion of <u>freefatty acids</u> into <u>acetyl CoA</u> to provide energy</li> <li><b>Causing hyperglycemia:</b> less: tissue glucose uptake &amp; glucose utilization in all the body. More: gluconeogenesis &amp; insulin resistance(by inc free fatty acids)</li> <li>(this is called: diabetogenic, or anti-insulin effect of GH)</li> </ul>

Regulation	<b>stimulants:</b> -Hypoglycemia                      -intake of AA (meal)                      -sleep -exercise                              -inc stomach secretion (ghrelin)      -stress (GH is released from A. of PG by GHRH of HT) <b>Inhibitors:</b> -hyperglycemia                      -hyperlipidemia (obesity) -high blood levels of somatomedins & GH (negative feedback) (by release of GHIH of HT)		
Path	inc	Adulthood	<b>Acromegaly</b> -normal height                      -hyperplastic soft tissue -enlarged hands and feet bones -enlarged membranous bones: all cranium & the supraorbital ridges -marked protrusion of lower jaw -kyphosis
		Childhood	<b>Gigantism</b> -hyperplastic all body tissues -marked height inc. -hyperglycemia
	Dec	childhood	<b>Dwarfism</b>
<b>Prolactin</b>			
Effect	-Inc: mRNA & casein & lactalbumin & dopamine(negative FB) -inh: gonadotropin (that's why women don't have menstrual cycle while breast feeding)		
Secretors	-pregnancy    -sleep    -stress    -exercise    -nipple sucking    -TRH		

Others			
Hormone	TC	Effect	Regulation
Adrenocorticotropins	Adrenal cortex	Release of glucoCorticoids	S: corticotropin RH I: glucoCorticoids
Thyroid stimulating H	Thyroid	Thyroid H	S: thyroid RH I: thyroid H
GH	All body	Pr anabolism Fat catabolism Hyperglycemia	S: GH RH I: somatostatin
Follicle SH	Gonads	Gemmate release Estrogen release (females only)	S: gonadotropin RH I: sex steroids & inhibin
Luteinizing	Gonads	Sex H release Ovulation Corpus luteum form- (females only) Testosterone release- (males only)	S: gonadotropin RH I: sex steroids
Prolactin	Mammary glands & accessory organs	Milk release	I: prolactin IH