

Endocrine Gland	Hormone	Exercise Effect	Target Organ	Major Function
<u>Hypothalamus</u>	Releasing hormones	Increases with anticipation of exercise	Pituitary Gland	Stimulates the pituitary gland to release hormones
	Inhibiting hormones	Increases with cessation of exercise	Pituitary Gland	Inhibits release of pituitary gland hormones
<u>Anterior Pituitary</u>	Growth hormone (GH)	Increases with increasing exercise	All cells of the body	Stimulates growth in all organs/ tissue, increases protein synthesis, the mobilisation and use of fat for energy and inhibits carbohydrate metabolism
	Thyroid stimulating hormone (TSH)	Increases with increasing exercise	Thyroid Gland	Controls the secretion of the hormones released by the thyroid
	Andrenocorticotrophic hormone (ACTH)	Increases in response to exercise	Adrenal Cortex	Controls the secretion of the hormones released by the adrenal cortex
	Endorphins	Increases with long duration exercise		Blocks pain
<u>Posterior Pituitary</u>	Anti diuretic hormone (ADH)	Increases with increasing exercise	Kidneys	Stimulates water retention by the kidneys
<u>Thyroid</u>	Thyroxin (T4)	Initial increase for both, but is not sustained	All cells in the body	Acts to regulate the body's metabolic rate (Not as active as T3)
	Triiodothyronine (T3)			Acts to regulate the body's metabolic rate (More biologically active than T4)
<u>Parathyroid</u>	Parathyroid hormone (PTH)	Increase with high intensity exercise	All cells in the body	Regulation of calcium

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<u>Adrenal Medulla</u>	Adrenaline (Epinephrine)	Increases with heavy exercise	Acts on most cells in the body, prolonging and intensifying the sympathetic nervous system response to stress	Mobilises glucose, increases heart rate, heart contractility, oxygen use and blood flow to the skeletal muscles Constricts blood vessels and elevates blood pressure
	Nor adrenaline (Nor epinephrine)	Increases with increasing exercise intensity or duration	Acts on most of the cells in the body, prolonging and intensifying the sympathetic nervous system response to stress	Mobilises glucose, increases heart rate, heart contractility, oxygen use and blood flow to the skeletal muscles Constricts blood vessels and elevates blood pressure
<u>Adrenal Cortex</u>	Aldosterone	Increases with exercise	Kidneys	Regulates electrolyte and fluid balance
	Cortisol	Increases with heavy exercise	Most cells in the body	Increases blood sugar levels, aids the metabolism of fats, CHO and proteins, suppresses the immune system, has an anti-inflammatory action

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<u>Pancreas</u>	Insulin	Decreases with increasing exercise	All cells in the body	Controls blood glucose by lowering blood glucose levels
	Glucagon	Increases with increasing exercise	Liver	Increases blood glucose, stimulates breakdown of glycogen and fat
<u>Kidneys</u>	Renin	Increases as blood pressure lowers	Adrenal Cortex	Assists in blood pressure control
<u>Gonads</u>				
<u>Testes (Male)</u>	Testosterone	Increases with increasing exercises	Muscle	Promotes muscle growth
			Sex organs	Development of male sex organs, facial hair and change in voice
<u>Ovaries (Female)</u>	Oestrogen/ Progesterone	Can be lowered with exercise (premenopausal)	Sex organs	Development of female sex organs, regulates menstrual cycle
			Adipose Tissue	Storage of fat