Chapter 11
The endocrine system

Glossary

Source: Adapted in part from De Wood (2011).

Adrenal cortex: the outer component of the adrenal gland; secretes cortisol and aldosterone.

Adrenal medulla: the inner component of adrenal gland; secretes adrenaline (epinephrine) and noradrenaline (norepinephrine).

Circadian rhythm: also known as ‘biological clock’; our internal time-measuring mechanism that adjusts according to night and day, seasonally or both in response to environmental cues.

Adenosine monophosphate (cAMP): synthesized from adenosine triphosphate in cellular respiration.

Endocrine system: system of glands, cells and tissues integrally linked to the nervous system; controls functions through the secretion of hormones and other chemicals.

Gonad: primary reproductive organ in which human gametes are produced.

Hormone: signalling molecule secreted by the endocrine glands that stimulates or inhibits activities of any cell via the action on receptors. Hormones are transported by the bloodstream.

Hypothalamic inhibitor: hypothalamic molecule that suppresses a particular secretion by the anterior lobe of the pituitary gland.

Hypothalamus: centre of homeostatic control over the body’s internal environment (e.g. water and sodium balance, temperature); influences hunger, thirst, the stress response, sexual differentiation and emotions.

Local signalling molecule: a secretion that alters chemical conditions in localized tissues (e.g. prostaglandin).

Negative-feedback mechanism: a homeostatic mechanism by which a condition that changed as a result of an activity triggers a response that stops or reverses the change.

Neurotransmitter: signalling molecules secreted by neurones that act on cells transmitting signals across synapses (gaps between neurones); they are then rapidly degraded or recycled.

Pancreatic islet: clusters of pancreatic endocrine cells.

Parathyroid gland: one of four small glands embedded in the thyroid; their secretions influence blood calcium levels.
**Peptide hormone:** a hormone that binds to a membrane receptor, thus activating enzyme systems that alter target cell activity. A second messenger in the cell often relays the hormone's message.

**Pineal gland:** light-sensitive endocrine gland; its melatonin secretions affect internal circadian rhythm.

**Pituitary gland:** endocrine gland that functions closely with the hypothalamus; controls many physiological functions influencing many other endocrine glands. Its posterior lobe stores and secretes hypothalamic hormones. Its anterior lobe produces and secretes its own hormones.

**Positive-feedback mechanism:** homeostatic control that initiates a chain of events that intensify change from an original condition.

**Puberty:** period of development when secondary sexual traits emerge and mature.

**Releasing hormone (hypothalamic):** hypothalamic molecule that enhances or slows secretions from target cells in the anterior lobe of pituitary gland.

**Second messenger:** molecule within a cell that mediates a hormonal signal.

**Steroid hormone:** lipid-soluble hormone made from cholesterol that acts on target cell DNA.

**Thymus gland:** endocrine gland that produces thymosins that help to develop T-lymphocytes necessary for immunity.

**Thyroid gland:** endocrine gland that secretes hormones influencing growth, development and metabolic rate.

**Tropic hormone:** one that influences or stimulates another gland to release its hormone.