Molecules can move between cells if they are nearby
Cells can use electrical impulses (neural)
Cells can use chemical messengers (hormones)

The Endocrine System
- Hormones are chemical messengers that are produced in special types of cells (secretory cells) and can have their effect;
  - Within the same cell (autocrine)
  - On nearby cells by moving into the tissue fluid and then interacting with neighbouring cells (paracrine)
  - Cells far away as they are released into the blood stream and transported around the body (main type) (endocrine)

Hormones:
- In general terms, hormones are;
  - Slow to act
  - Long lasting
- Hormones will only cause a response in a cell that has a specific receptor for that hormone
  - Some cells have multiple receptors for multiple hormones
  - Some cells that have one receptor for one hormone
  - A reaction in the one type of cell to a particular hormone may be different to the reaction cause in a different type of cell.

Types of Hormones
- Amino Acid Derivative
  - Structurally related to amino acids
  - Water soluble (hydrophilic)
  - Unable to cross cell membranes
  - Travel in blood stream and take effect on receptors on cell surface
- Steroid
  - Related to cholesterol
  - Lipophilic: can cross cell membranes
  - Require carrier protein to be transported in blood
  - Testosterone and progesterone
- Peptide and Protein
  - Chains of amino acids
  - Water soluble (hydrophilic)
  - Unable to cross cell membranes
  - Travel in blood stream
  - Take effect on receptors
  - On cells surface
  - Insulin (peptide)
  - Thyroid Stimulating
  - Hormone (TSH)