

## Definitions and Concepts for WJEC (Wales) Biology GCSE

### Topic 2.6: Role of Kidneys in Homeostasis

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*Definitions in **bold** are for higher tier only*

*Definitions marked by '\*' are for separate sciences only*

**Anti-diuretic hormone (ADH)** - A hormone secreted by the pituitary gland which increases water reabsorption in the kidney (making the kidney tubules more permeable to water).

**Arteriole** - A small blood vessel that connects the arteries to the capillaries.

**Bladder** - Where urine is collected before urination.

**Bowman's capsule** - Surrounds the capillary knot and is where ultrafiltration of the kidney takes place.

**Capillary knot** - A ball of capillaries surrounded by Bowman's capsule. The blood is under high pressure here, allowing it to be filtered.

**Collecting duct** - Where urine passes down into the ureter and it is the site of selective reabsorption of water.

**Dialysis** - A technique used in treatment of kidney disease where the body's blood is removed and filtered.

**Immunosuppressant drugs** - A type of drug which must be taken after a transplant to prevent the body from rejecting the donor organ/tissue.

**Kidney** - The organ in the body that maintains water balance and produces urine.

**Kidney cortex** - The outer region of the kidney which contains the nephrons.

**Kidney transplant** - When a faulty/failed kidney is replaced with a healthy kidney from a donor.

**Nephron** - The unit of the kidney where filtration takes place.

**Osmoregulation** - A type of homeostasis by the kidneys which controls water and mineral ion balance in the blood.

**Pituitary gland** - The gland that stores and releases hormones which regulate many bodily functions.

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**Renal artery** - The blood vessel that provides the kidney with blood.

**Renal vein** - The blood vessel that takes blood away from the kidney.

**Selective reabsorption** - When the kidney reabsorbs water, mineral ions and glucose into the bloodstream to restore a balance.

**Tissue typing** - When the antigens of the donor's organ/tissue are matched to the antigens of the recipient's organ/tissue in order to get the best suited donor for a transplant. This helps prevent rejection by the recipient's immune system.

**Type 1 diabetes** - A condition in which the pancreas fails to produce insulin resulting in high blood sugar levels. Glucose in the urine can indicate diabetes.

**Type 2 diabetes** - A condition in which a person develops insulin resistance or doesn't produce enough insulin. Glucose in the urine can indicate diabetes.

**Urea** - A waste product due to the breakdown of proteins in the body which is excreted from the body in the urine.

**Ureter** - Tubes which carry urine from the kidney to the bladder for excretion.

**Urethra** - Tubes which carry out the excretion and remove the urine from the bladder.

**Urine** - A liquid produced by the kidneys to help maintain water balance. It contains mineral ions, water and urea.

**Vena cava** - The main vein that carries deoxygenated blood to the right atrium of the heart.

✦ Definition taken from: [WJEC \(Wales\) GCSE in BIOLOGY Specification V.2 January 2019](#)

