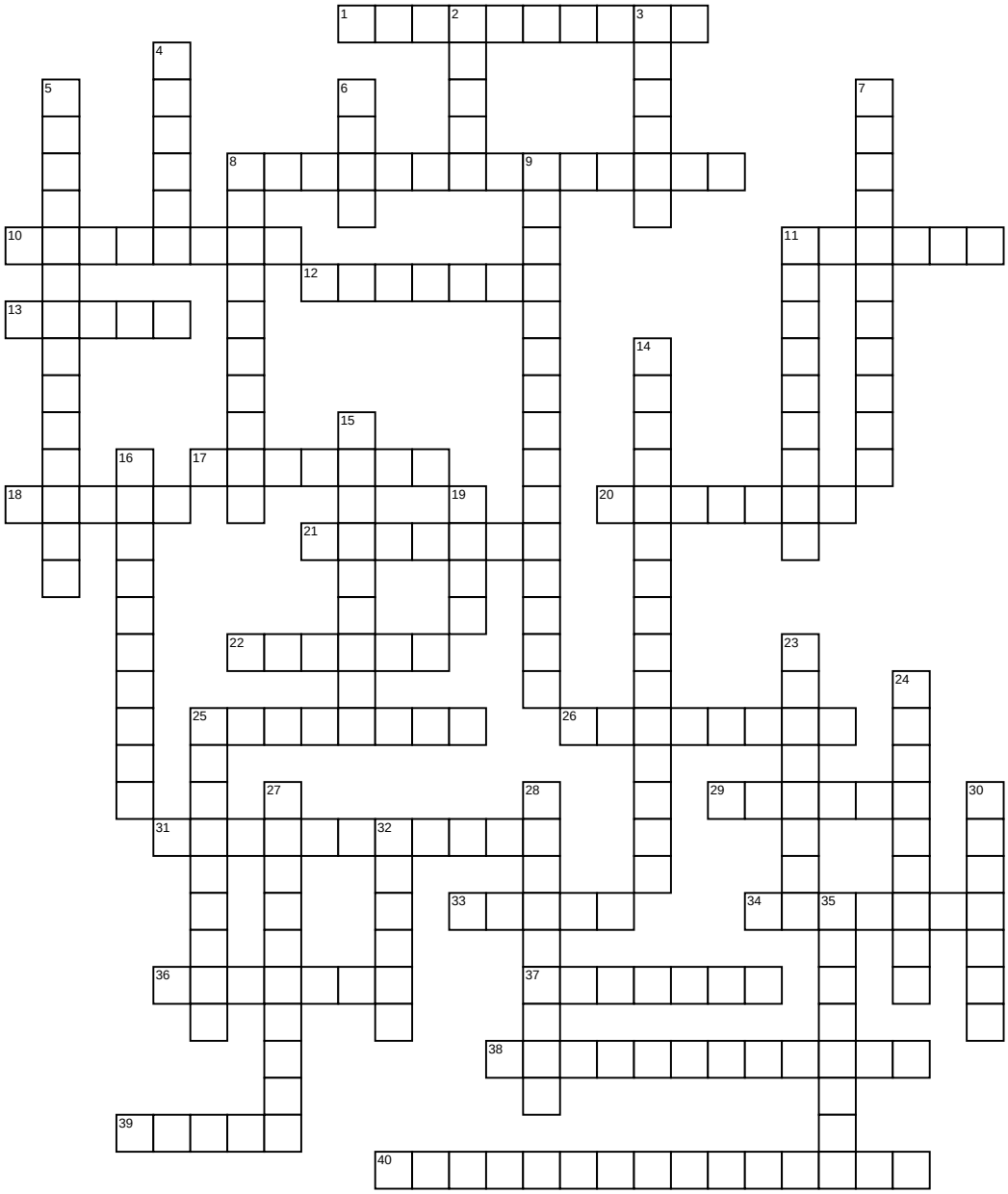
# Urinary System



**ACROSS**

**1** A _____ is a capillary tuft surrounded by Bowman's capsule in nephrons of the vertebrate kidney which receives its blood supply from an afferent arteriole of the renal circulation.

**8** _____ exchange is a mechanism used to transfer some property of a fluid to another across a semipermeable membrane.

**10** The glomerular _____ membrane is the basal laminal portion of the glomerulus which performs the actual filtration with the renal corpuscle, separating the blood on the inside from the filtrate on the outside.

**11** The renal _____ is the outer portion of the kidney between the renal capsule and the renal medulla.

**12** The urinary _____ is a hollow, muscular, and distensible organ that collects urine excreted by the kidneys prior to disposal by urination.

**13** In the kidney, the loop of _____ is the portion of the nephron that leads from the proximal convoluted tubule to the distal convoluted tubule. The main function of this structure is to reabsorb water and ions from the urine.

**17** The renal _____ is the innermost part of the kidney.

**18** The _____ calyx is a structure surrounding the apex of the malpighian pyramids into which urine formed in the kidney passes after passing into the minor calyx.

**20** The renal _____ is a tough fibrous layer surrounding the kidney and covered in a thick layer of perinephric adipose tissue.

**21** The renal _____ is the location where the Medullary pyramids empty urine into the renal pelvis.

**22** The _____s are organs that filter wastes, such as urea, from the blood and excrete them, along with water, as urine.

**25** _____ is increased production of urine by the kidney.

**26** Renal _____ are cone-shaped tissues of the kidney within the renal medulla, which is made up of 8 to 18 of these conical subdivisions.

**29** The cells of the _____ densa within the juxtaglomerular apparatus are sensitive to the ionic content and water volume of the fluid in the distal convoluted tubule within the kidney.

**31** _____ capillaries are tiny blood vessels that travel along side nephrons allowing reabsorption and secretion between blood and the inner lumen of the nephron.

**33** _____ blood flow is the volume of blood delivered to the kidneys per unit time.

**34** A _____ is the basic structural and functional unit of the kidney.

**36** The _____ is a tube which connects the urinary bladder to the outside of the body.

**37** The _____ is a smooth triangular region of the internal urinary bladder formed by the two ureteral orifices and the internal urethral orifice.

**38** Renal _____ is a mechanism by which the kidneys can regulate the plasma pH.

**39** _____ is a liquid produced through the kidney, and is collected in the bladder and excreted through the urethra.

**40** The _____ apparatus is a microscopic structure in the kidney which regulates the function of each nephron.

**DOWN**

**2** The _____ calyx is a structure surrounding the apex of the malpighian pyramids into which urine formed in the kidney passes before passing into the major calyx.

**3** The _____s are the ducts that carry urine from the kidneys to the urinary bladder.

**4** _____-glucose transport proteins are a family of glucose transporter found in the intestinal mucosa of the small intestine and the proximal tubule of the nephron.

**5** A _____ nephron is one where the proximal convoluted tubule and its associated loop of Henle occur at a deep position compared to most other nephrons.

**6** Anion Exchanger 1 or _____ 3 is a transport protein responsible for catalysing the electroneutral exchange of chloride for bicarbonate across a plasma membrane.

**7** The _____ buffering system is the most important buffer solution for maintaining a relatively constant pH in the plasma.

**8** The distal _____ tubule is a portion of kidney nephron between the loop of Henle and the collecting duct system.

**9** _____ occurs at the barrier between the blood and the filtrate in the renal corpuscle or Bowman's capsule in the kidneys.

**11** A renal _____ is the initial filtering component of a nephron consisting of a glomerulus and a Bowman's capsule.

**14** The _____ cells are cells that synthesize, store, and secrete the enzyme renin.

**15** The renal _____ of a substance is the inverse of the time constant that describes its removal rate from the body divided by its volume of distribution.

**16** The _____ duct system of the kidney consists of a series of tubules and ducts that connect the nephrons to the ureter.

**19** Foot processes of podocytes of the glomerulus interdigitate with one another forming filtration _____s that, in contrast to those in the glomerular endothelium, are spanned by diaphragms.

**23** _____s are cells of the visceral epithelium in the kidneys and form a crucial component of the glomerular filtration barrier, contributing size selectivity and maintaining a massive filtration surface.

**24** _____s are a class of major intrinsic proteins that form pores in the membrane of biological cells which selectively conduct water molecules in and out, while preventing the passage of ions and other solutes.

**25** The _____ Diagram is a graphical tool that allows a clinician or investigator to describe blood bicarbonate concentrations and blood pH following a respiratory and/or metabolic acid-base disturbance.

**27** _____ acid is a term to describe acids such as phosphoric acid, sulfuric acid which are involved in renal physiology, a term used explicitly to exclude ammonium as a source of acid.

**28** _____, known by physiologists as micturition ot voiding, is the process of disposing urine from the urinary bladder through the urethra.

**30** The _____ system is the organ system that produces, stores, and eliminates urine. In humans it includes two kidneys, two ureters, the bladder, and the urethra.

**32** _____'s capsule is a cup like sac at the beginning of the tubular component of a nephron in the kidney. A glomerulus is enclosed in the sac.

**35** The _____ tubule is the portion of the duct system of the nephron leading from Bowman's capsule to the loop of Henle.