

Class - VII Subject: Biology
Chapter - 5. Excretion in Humans.
Teacher : Ms. Nidhi

Good Morning, students! This lesson is of class-VII for the subject of Biology, Chapter - 5, 'Excretion in Humans' of your textbook Concise Biology, Selina Publications. It is being submitted to you on 04.11.2024. Today we are going to discuss a life process called excretion and why is it important.

Organisms produce waste substances while performing various metabolic activities within their bodies. Most of these wastes are toxic or poisonous, if present in great concentration and can be harmful for the body if not removed periodically.

The organs which remove the unwanted and toxic substances from the body are called excretory organs. These are :

1. Kidneys
2. Lungs
3. Skin.

Nitrogenous wastes such as urea, uric acid, ammonia and other inorganic salts, along with water are excreted from the body through the kidney.

The process of removal of unwanted and harmful metabolic waste substances is called excretion.

Now let us know about the substances to be excreted.

1. **Urea and uric acid** : These are nitrogenous wastes. These are produced as a result of the breakdown of excessive amino acids in the liver. If allowed to accumulate in the body, these are harmful.
2. **Bile pigments** : Bile pigments are formed in the liver. They give a yellowish colour to the urine. Excess of bile pigments become harmful, hence they are removed from the body.
3. **Water** : Water is taken in with food and beverages in large quantities. Plenty of water in the body is essential for 'washing out' of the nitrogenous wastes. The body retains some water required as a normal constituent while excess water is removed from the body in the form of urine and sweat.
4. **Extra salts** : Sodium and chloride ions are needed in the body, only in certain proportions. Any extra quantity has to be removed. Extra salts are removed alongwith urine.
5. **Extra vitamins** : The vitamins like vitamin B and vitamin C are water soluble vitamins. If present in excess they are passed out in urine. Similarly, certain medicines

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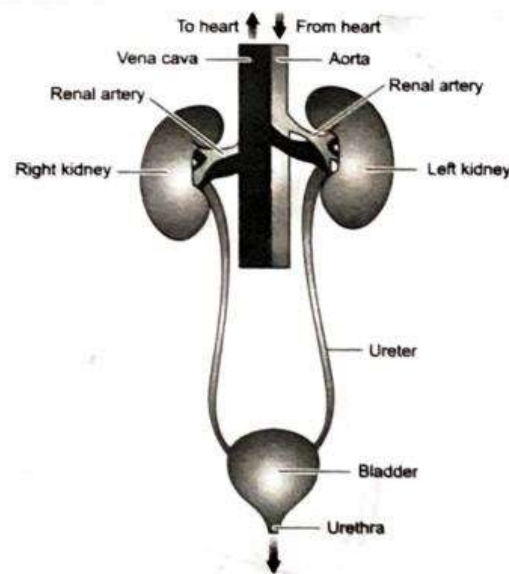
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like antibiotics, if taken in extra quantity are passed out alongwith urine.

Now, our next topic is human excretory system or renal excretory system.

Human excretory system consists of a pair of kidneys, two ureters, a urinary bladder and a urethra.



1. **Kidneys** : The two reddish-brown bean-shaped kidneys are situated towards the back of the abdomen, one on either side of the backbone at the level of last two ribs.

Note : The right kidney is slightly lower than the left kidney.

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The function of the kidney is to filter the blood and remove nitrogenous waste such as urine and uric acid. It also removes excess water, soluble salts like sodium and other dissolved wastes in the form of urine from the body.

2. **Ureters** : Ureters are a pair of tube-like structures that originate from the inner side of each kidney upto the urinary bladder.

Ureters receive urine from the kidneys and transport it downwards towards the urinary bladder.

3. **Urinary bladder** : Urinary bladder is a muscular bag-like structure situated in the lower abdomen.

Urinary bladder stores urine temporarily and removes it later through a short tube called urethra.

4. **Urethra** : The urethra is a short muscular tube that arises from the lower end of the urinary bladder.

This opening is controlled by sphincter muscles that regulate the flow of urine. These muscles relax to release urine out of the body.

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Now students, I am going to ask you few questions based on what you have learnt today.

1. In human beings, urea is produced in _____.
2. The pair of tube-like structures that originates from the kidneys.
3. A short muscular tube that release urine out of the body.
4. The nitrogenous wastes produced in our body.

Answers to above questions are :

1. liver
2. ureters
3. urethra.
4. Urea and uric acid.

With this I am ending today's lesson. Go through the same topic from your textbook also and draw diagram of excretory system in your notebooks by taking reference from your textbook. It is given on Page no - 52.