



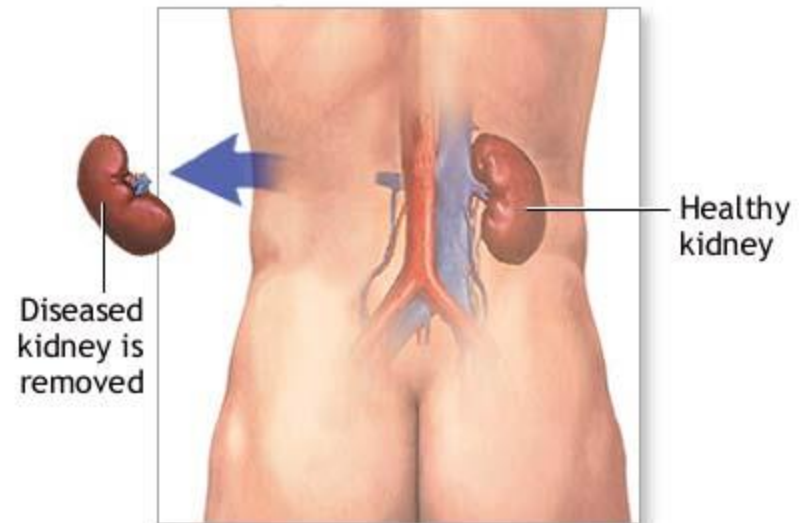
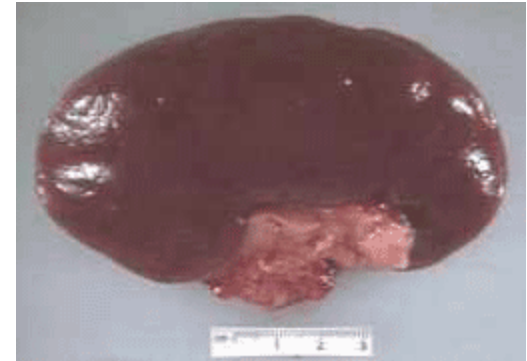
EXCRETORY SYSTEM AND KIDNEYS



SBI 3C

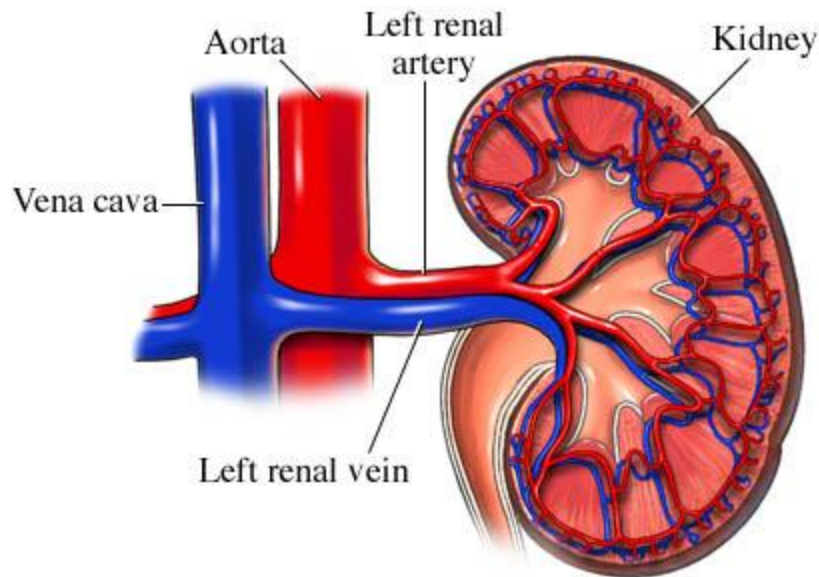
KIDNEYS:

- ▶ About the size of a fist
- ▶ Weighs approximately 0.5kg
- ▶ Located on back of upper abdomen at either side of spinal column
- ▶ Filter blood and remove waste
 - ▶ Hold as much as 25% of body's blood at any time



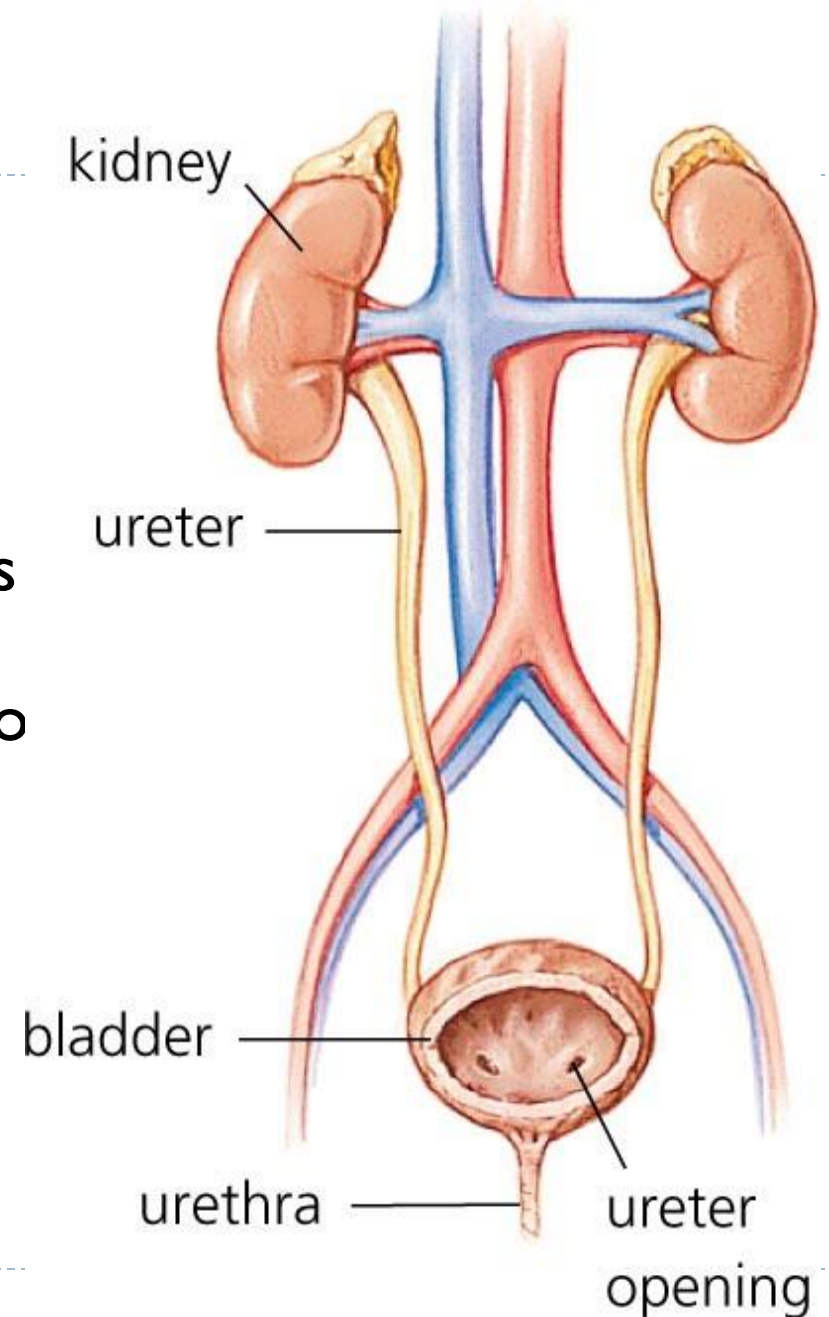
BLOOD PATHWAY:

- ▶ Blood is brought to kidneys by renal arteries
 - ▶ Renal refers to kidney
- ▶ Kidneys form urine which is filtered from blood
- ▶ Purified blood returns to circulatory system by renal veins



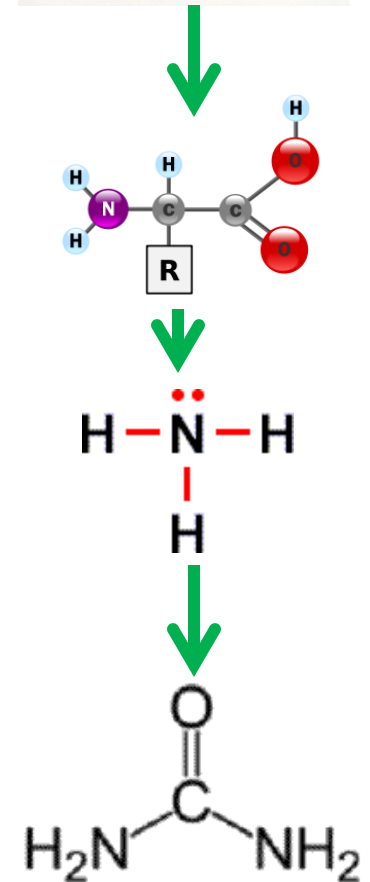
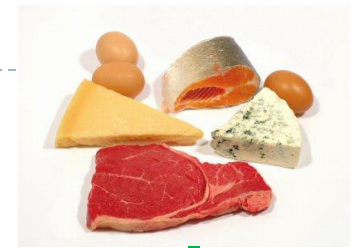
URINE PATHWAY:

- ▶ Urine travels from kidneys to bladder
- ▶ Urinary sphincter muscle keeps urine in bladder
- ▶ When approximately 200ml is collected, bladder stretches and sends signal to brain to go to bathroom
- ▶ When bladder fills to 400mL signal becomes more urgent
- ▶ If bladder fills to 600mL, voluntary control is lost



PROTEIN BREAKDOWN:

- ▶ Humans eat protein for amino acids
- ▶ Amino acids are made into proteins used to build and repair body tissues
- ▶ Unused amino acids are broken down in the liver
- ▶ These amino groups are converted into ammonia which is very toxic to the body
- ▶ In the liver, ammonia is combined with carbon dioxide to produce urea
- ▶ Urea is dissolved in blood and carried to the kidneys where it is excreted in urine



KIDNEY DISEASE:

▶ Kidney Stones:

- ▶ Dissolved minerals in blood form stones
- ▶ Sharp edges can tear tissues as they move and cause pain



▶ Kidney Failure:

- ▶ Kidneys are not working to filter the blood
- ▶ Treatments:
 - ▶ Dialysis: machine cleans blood
 - ▶ Transplant: single kidney from family member or match donor
 - ▶ Single kidney: blood flow increase to healthy kidney

