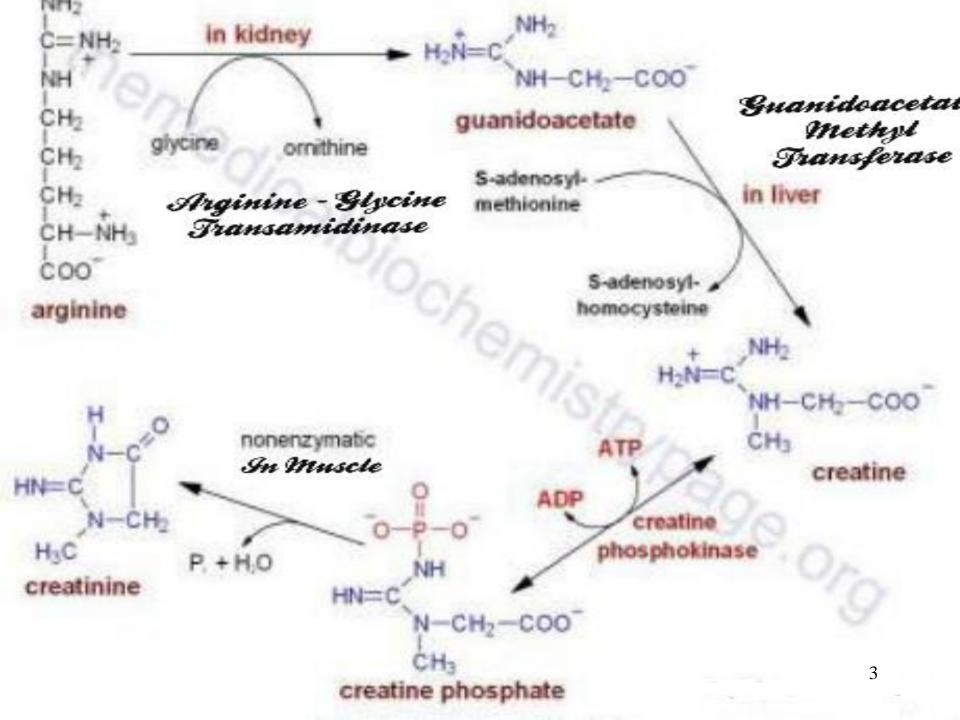


- Creatinine is a hetrocyclic nitrogenous compound , formed in muscle from the high energy storage compound (creatine phosphate) at a rate dependent on muscle bulk .

 Normal range : Male : 0.8 – 1.3 mg / dl Female : 0.5 – 0.9 mg / dl

- Increased serum creatinine level occurs in :
- 1. Impaired renal function.
- 2. Chronic nephritis.
- 3. Urinary tract obstruction.
- 4. Muscle diseases such as gigantism and acromegaly.
- 5. Congestive heart failure.
- 6. Trauma.
- Decreased creatinine levels may be occurs in :
- 1. Elderly.
- 2. Decreased muscle mass.
- 3. Muscle atrophy.



Notes :

- 1. Values of creatinine are lower in children than adult, lower in women than in men because the bulk of muscle in male is greater than that in female plasma and lower during pregnancy.
- 2 .Some drugs such as acetyl salicylic acid (aspirin) and cimetidine (tagamet) { tablets used for treatment of duodenal ulcers } increase plasma creatinine by inhibiting tubular secretion of creatinine.

- 3. The kidneys has three major functions :
 - Extraction of waste product .
 - -Maintain extracellular fluids volume and compositions.
 - Hormones synthesis such as erythropoietin (the secretion of these hormone will be affected in the renal disease).
- 4. Biochemical test of renal functions :
 - Measurment of GFR (measurment of creatinine).
 - Blood urea.
 - General urine analysis (presence of albumin in urine and RBCs).

<u>Creatine Kinase isoenzyme</u>

Creatine kinase is a dimer of BB, MB, **MM isoenzymes.**

- CK-1 or BB is found in brain.
- CK-2 or MB is found in heart only.
- CK-3 or MM is found in skeletal and heart muscle.

The appearance of CK-2 in the blood is diagnostic of myocardial infraction because the heart is the only tissue containing CK-2.