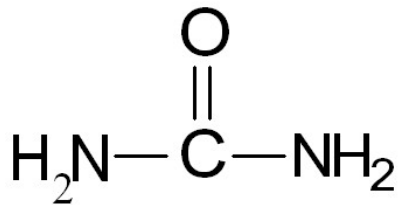


Determination of Blood Urea Nitrogen (BUN)

Urea is the final product of the urea cycle. Urea is the non-toxic, excretory form ammonia in the body. Urea's structure is illustrated, below:



The blood urea nitrogen (BUN) test is a measure of the amount of nitrogen in the blood in the form of urea, and a measurement of renal function. Urea is a by-product from metabolism of proteins by the liver and is removed from the blood by the kidneys. The liver produces urea in the urea cycle as a waste product of the digestion of protein. Blood urea levels go up in most kidney diseases as urea excretion is affected. It may also be high in patients with liver disease or dehydration. A large number of drugs increase blood urea level by competing with it for excretion by the kidneys

Formation of Urea:

The amino acids derived by the digestion of proteins of the food we eat are absorbed by a small intestine and brought to the liver through the portal vein. The essential amino acids required for the growth and repair of body tissues are passed on to the blood circulation by the liver and others are used to produce the blood proteins and useful proteins for the body. Useless proteins are broken down in the liver to form bioenergy composed of carbon, hydrogen and oxygen and a waste product urea. Urea is a water soluble substance and carried away by the blood stream .

High per uraemia

- Kidney diseases like glomerulonephritis, pyelonephritis, and acute tubular necrosis
- Renal (kidney) failure
- Too much protein breakdown like in starvation
- Very high protein intake
- Congestive heart failure
- Heart Attack
- Bleeding in the gut
- Decrease in the blood volume like in burns, dehydration or shock
- Obstruction in the urinary tract due to a tumour, stones.

Highpo uraemia :

Low levels of BUN may indicate :

- overhydration
- malnutrition
- celiac disease [a disease characterized by the inability ot tolerate foods containing wheat protein .
- liver damage or disease, or use of corticosteroids.
- Low BUN may also occur in early pregnancy.

Normal human adult blood should contain between 7 to 21 mg of urea nitrogen per 100 ml (7–21 mg/dL) of blood.