

ETINOSA-OGBAHON OSASENAGA

18/MHS07/019

PHARMACOLOGY

PHS 212

PROPERTIES AND COMPOSITION OF NORMAL URINE

Characteristics

: 1,000 to 1,500 mL/day

: Slightly acidic with pH of 4.5 to 6

: 1.010 to 1.025

: 1,200 mOsm/L

: Normally, straw colored

: Fresh urine has light aromatic odor.

If stored for some time, the odor becomes stronger due to bacterial decomposition.

- **Color:** Typically yellow-amber, but varies according to recent diet and the concentration of the urine. Drinking more water generally tends to reduce the concentration of urine, and therefore causes it to have a lighter color. Dark urine may indicate dehydration. Red urine indicates red blood cells within the urine, a sign of kidney damage and disease.

- * **Smell:** The smell of urine may provide health information. For example, urine of diabetics may have a sweet or fruity odor due to the presence of ketones (organic molecules of a particular structure) or glucose. Generally fresh urine has a mild smell but aged urine has a stronger odor similar to that of ammonia.

- * **The pH of normal urine** is generally in the range 4.6 – 8, with a typical average being around 6.0. Much of the variation occurs due to diet. For example, high protein diets result in more acidic urine, but vegetarian diets generally result in more alkaline urine (both within the typical range of 4.6 – 8).

- * **Density:** Density is also known as “specific gravity.” This is the ratio of the weight of a volume of a substance compared with the weight of the same volume of distilled water. The density of normal urine ranges from 0.001 to 0.035.

- * **Turbidity:** The turbidity of the urine sample is gauged subjectively and reported as clear, slightly cloudy, cloudy, opaque or flocculent. Normally, fresh urine is either clear or very slightly cloudy. Excess turbidity results from the presence of suspended particles in the urine, the cause of which can usually be determined by the results of the microscopic urine sediment examination. Common causes of abnormal turbidity include: increased cells, urinary tract infections or obstructions.

COMPOSITION OF URINE

Urine consists of water and solids. Solids include organic and inorganic substances

- * Urea 9.3 g/L.

- * Chloride 1.87 g/L.

- * Sodium 1.17 g/L.

- * Potassium 0.750 g/L.

- * Creatinine 0.670 g/L.

* Other dissolved ions, inorganic and organic compounds (proteins, hormones, metabolites).