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## Characteristics and components of urine

### 1. Characteristics of urine

#### a. Specific gravity

Specific gravity is an easy way to estimate the osmolarity of a urine sample. The specific gravity of urine is a ratio of the density of a urine specimen to water. The density of water is 1.000g/ml. As a result, the specific gravity of a well-hydrated person's urine is 1.003g/ml, whereas the specific gravity of a dehydrated person's urine will be 1.032g/ml

#### b. Color

The color of urine is determined mostly by the breakdown products of red blood destruction. The color of urine is typically yellow-amber, but varies according to recent diet and contraction of 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. dorcasa

#### c. Smell

The smell of urine may provide health information. For example, urine of diabetics may have a sweet or fruity odor due to presence of ketones or glucose. Generally fresh urine has a mild smell but aged urine has a stronger odor similar to that of ammonia.

#### d. Ph

The Ph of a normal urine is generally between the range 4.6-8, with a typical average around 6.0

#### e. Urine volume

Urine volume varies considerably. The normal range is one to two liters per day. The kidney must produce a minimum urine volume of about 500ml/day to get rid of the body wastes. Output below this level may be caused by severe dehydration or renal disease and is termed **oliguria**. The virtual absence of urine production is termed **anuria**. Excessive production is **polyuria**.

## 2. Components

- Electrolytes such as sodium, potassium, calcium, magnesium and chloride
- Nitrogenous wastes such as urea and creatinine: nitrogenous wastes are produced by the breakdown of proteins during metabolism. Proteins are broken down into amino acids, which in turn are deaminated by having their nitrogen groups removed. Deamination is the process by which amino groups are been removed from amino acid. Uric acid is produced by the metabolism of purines( a type of nucleic acid). Creatinine is a metabolite of creatine phosphate in muscles.
- Vitamins
- Hormones
- Organic acid such as uric acid
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