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**MATRIC NUMBER:18/MHS02/042**

**DEPARTMENT: NURSING**

**COURSE CODE: PHS 212**

**Urinary Physical Characteristics**

The pH of urine is normally around 6.2 with a range of 5.5–7.0.  A high dietary protein and alcohol intake leads to increased pH, while vegetables and fruit bring about a more alkaline pH.

• The specific gravity of urine may range from 1.002 to 1.037.

• The mean calorific content of urine may be approximately 100 kcal/day.

Normal Urine Characteristics

**Characteristics** **Normal** **values**

Color Pale yellow to deep amber

Odor Odorless

Volume 750–2000 mL/24 hour

pH 4.5–8.0

Specific gravity 1.003–1.032

Osmolarity 40–1350 mOsmol/kg

Urobilinogen 0.2–1.0 mg/100 mL

White blood cells 0–2 HPF (per high-power field of microscope)

Leukocyte esterase None

Protein None or trace

Bilirubin <0.3 mg/100 mL

Ketones None

Nitrites None

Blood None

Glucose None

**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.

**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.

Abnormalities in any of these of physical characteristics may indicate disease or metabolic imbalances. These problems may seem superficial or minor on their own, but can actually be the symptoms for more serious diseases, such as diabetes mellitus, or a damaged glomerulus.