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Nursing

200level

PHS 212- Physiology

**Question: write a short note on the characteristics and components of urine**

Urine is a liquid by-product of metabolism in humans and in many other animals. Urine flows from the kidneys through the ureters to the urinary bladder. Urination results in urine being excreted from the body through the urethra. The composition of urine reveals much about body function. Metabolic waste products such as carbon dioxide, urea, uric acid, creatinine, sodium chloride, and ammonia are normally present and have no particular pathological significance.

Characteristics of the urine change, depending on influences such as water intake, exercise, environmental temperature, nutrient intake, and other factors. Physical characteristics that can be applied to urine include:

- **Color:** Urine varies in appearance, depending principally upon a body's level of hydration, as well as other factors. Normal urine is a transparent solution ranging from colorless to amber but is usually a pale yellow. Colorless urine indicates over-hydration, generally preferable to dehydration (though it can remove essential salts from the body). Dark yellow urine is often indicative of dehydration.
- **Turbidity (transparency):** Turbid (cloudy) urine may be a symptom of a bacterial infection, but can also be caused by crystallization of salts such as calcium phosphate.
- **Smell (odor):** Sometime after leaving the body, urine may acquire a strong "fish-like" odor because of contamination with bacteria that break down urea into ammonia. This odor is not present in fresh urine of healthy individuals; its presence may be a sign of a urinary tract infection. The odor of normal human urine can reflect what has been consumed or specific diseases.
- **pH (acidity – alkalinity):** The pH normally is within the range of 5.5 to 7 with an average of 6.2.
- **Density:** Human urine has a specific gravity of 1.003–1.035. Any deviations may be associated with urinary disorders.
- **Quantity:** Average urine production in adult humans is around 1.4 L of urine per person per day with a normal range of 0.6 to 2.6 L per person per day, produced in around 6 to 8 urinations per day depending on state of hydration, activity level, environmental factors, weight, and the individual's health.

consists of:

- Electrolytes such as sodium, potassium, calcium, magnesium and chloride.
- Nitrogenous chemicals such as urea and creatinine.
- Vitamins.
- Hormones.
- Organic acids such as uric acid.
- Other organic compounds.

Abnormal constituents most commonly found in urine are protein (proteinuria), glucose (glycosuria) and acetone (ketonuria), and all may have a significance that must not be ignored.