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DEPARTMENT: Nursing Science

MATRIC NUMBER: 18/mhs02/049

LEVEL: 200 Level

COMPONENTS OF URINE

1. Quantity:

Average urine production in adult humans is around 1.4L of urine per person per day with a normal range of 0.6 - 2.6 L per person per day, produced in around 6 - 8 urinations per day depending on state, hydration, activity level, environmental factors, weight, and the individuals' health.

2. Constituents:

About 91 – 96% of urine consists of water. Urine also contains an assortment of inorganic salts and organic compounds, including proteins, hormones, and a wide range of metabolites, varying by what is introduced into the body. The total solids in urine are on average 59kg per person per day. Organic matter makes up between 65 - 85% of urine dry solids, with volatile solids comprising 75 – 85% of total solids.

3. Color:

Urine appearance varies depending upon a body's level of hydration, as well as other factors. Normal urine is a transparent solution ranging from colorless to amber but usually pale yellow.

- Dark yellow urine indicates dehydration.
- Yellowing or light orange indicates that excess vitamin B is removed from the blood streams.
- Colorless urine indicates over-hydration.

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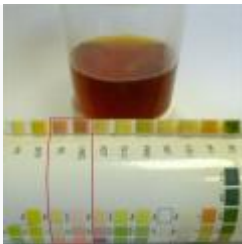
Dark urine due to low fluid intake.

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Dark red urine due to blood (hematuria).

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Dark red urine due to cholera.

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Pinkish urine due to consumption of beetroots.



Green urine during long term infusion of the sedative

4. Odor:

The odor of normal human urine can reflect what has been consumed or specific diseases. For example, an individual with diabetes mellitus may present a sweetened urine odor. This can be due to kidney diseases as well, such as kidney stones. 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.

5. Turbidity:

Turbid (cloudy) urine may be a symptom of a bacterial infection, but can also be caused by crystallization of salts such as calcium phosphate.

6. pH:

The pH normally is within the range of 5.5 to 7 with an average of 6.2. In persons with hyperuricosuria, acidic urine can contribute to the formation of stones of uric acid in the kidneys, ureters, or bladder. Urine pH can be monitored by a physician or at home. A diet which is high in protein from meat and dairy, as well as alcohol consumption can reduce urine pH, whilst potassium and organic acids, such as from diets high in fruit and vegetables, can increase the pH and make it more alkaline.

7. Density:

Human urine has a specific gravity of 1.003–1.035. Any deviations may be associated with urinary disorders.

8. Hazards:

Healthy urine is not toxic. However, it contains compounds eliminated by the body as undesirable, and can be irritating to skin and eyes. With suitable processing, it is possible to extract potable water from urine.

9. Bacteria and Pathogens:

Urine is not sterile, not even in the bladder. Earlier studies, with less sophisticated analytical techniques, had found that urine was sterile until it reached the urethra. In the urethra, epithelial cells lining the urethra are colonized by facultative anaerobic Gram-negative rod and cocci bacteria.