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Write short note on the characteristics (components) of urine

Urine has various characteristics and components, which include:

- **Composition.** Normal urine is composed of about 95 percent water and 5 percent solutes. Normal solutes found in urine include:
 - 1) Urea -400
 - 2) Creatinine -10
 - 3) Uric acid -4
 - 4) Phosphate -25
 - 5) Potassium -50
 - 6) Sodium- 200
 - (7) Chloride- 200
 - 8) Sulfate-50
- **Specific Gravity .** The specific gravity of urine depends upon the amount of solutes present. The greater the concentration of solutes, the higher the specific gravity. Normal range for specific gravity is from 1.008 to 1.030.
- **Appearance.** Urine is a transparent (clear) fluid. Colour varies from pale yellow to dark amber, depending upon its concentration. (Concentration is the ratio of solutes to water.)
 - 1) Dilute urine may be pale, straw coloured, or even appear colourless.
 - 2) Concentrated urine appears highly coloured (for example, bright yellow or deep amber).
 - 3) Turbid (cloudy) urine is usually considered abnormal. It may be the result of blood, pus, sperm, or bacteria present in the urine.
- **Odour .** Normal, freshly voided urine has a faint aromatic odour. Old, stale urine develops a strong ammonia odour from chemical breakdown.
 - 1) A strongly offensive odour may indicate the presence of bacteria.
 - 2) Diet selection can alter normal odour. Asparagus is a good example
 - 3) Some medications may alter the normal odour of urine. Ampicillin is one example.
- **Amount .** The average, normal adult will excrete approximately 1,500 to 2,000 ml of urine each day (every 24 hours). This will vary with fluid intake and fluid loss. Fluid losses other than urination include fluid lost through vomiting, diarrhoea, and “insensible” losses. Insensible fluid loss is that which is not perceptible or appreciable. Such loss includes that fluid which is lost through respiration, evaporation from the skin, and fecal content.

- **Urine Osmolarity** :The urine osmolarity is a way to assess the concentration of the urine and may vary between 50 and 1200 mOsmol/kg. on average, urinary solute comes to about 1000 mOsmol/day, with approximately 1.4 litres of urine being secreted per day. The amount and concentration of urine varies with the level of exertion, the environment, the level of hydration, and the intake of salt and protein. The solute concentration is higher in meat-eaters, because of the large amount of urea obtained from meat, whereas lower solutes are formed in vegetarians who get most of their energy from carbohydrates.
- **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.
- 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).