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**Nursing, 200level**

**18/MHS02/122**

**Phs 212- physiology**

**Question: Write a short note on urinalysis.**

A urinalysis is a simple test that looks at a small sample of urine. It can help find problems that need treatment, including infections or kidney problems. It can also help find serious diseases in the early stages, like kidney disease, diabetes, or liver disease. A urinalysis is also called a urine test. Urinalysis is done by collecting a urine sample from a patient. The optimal sample tends to be an early morning urine sample because it is frequently the most concentrated urine produced in the day. Typically, no fasting is required before the collection of urine sample and routine medications can be taken before the test, unless otherwise instructed by the ordering physician. Methods of collection are slightly different for female and male patient.

The principle of urinalysis is that through chemical and microscopic analysis of the urine specimen, information about the body's metabolic functions may be obtained. This aids in the evaluation of renal, urinary, and metabolic disorders.

Urine testing is currently primarily used to detect bacterial STDs. Chlamydia and gonorrhea urine tests are widely available. Trichomoniasis urine tests are also available, but they are less common. The gold standard for diagnosing bacterial STDs, such as chlamydia and gonorrhea, used to be bacterial culture. Interpretation of urinalysis is generally based on reviewing all the components of the test and correlating it with the clinical signs and symptoms of the patient and the physical examination. The results are reviewed and interpreted by the doctor who ordered the test. Urinalysis is ordered by doctors for a number of reasons, including the following:

- Routine medical evaluation.
- Assessing particular symptoms.
- Diagnosing medical conditions.
- Monitoring disease progression and response to therapy.
- Pregnancy testing.

Macroscopic urinalysis is the direct visual observation of the urine, noting its quantity, color, clarity or cloudiness, etc. While The microscopic urinalysis is the study of the urine sample under a microscope. It requires only a relatively inexpensive light microscope. Cells and cellular

debris, bacteria, and crystals in the urine (crystalluria) can be detected by microscopic examination to provide confirmation of the dipstick color change and further clinical clues.

Urine test strip is a narrow plastic strip which has several squares of different colors attached to it. Each small square represents a component of the test used to interpret urinalysis. The entire test strip is dipped in the urine sample and color changes in each square are noted. The color change takes place after several seconds to a few minutes from dipping the strip. If read too early or too long after the urinalysis strip is dipped, the results may not be accurate. Each color change on a particular square may indicate specific abnormalities in the urine sample caused by a certain chemical reaction. The reference for color changes is posted on the plastic bottle container of the urine test strips. This makes for easy and quick interpretation of the urinalysis results by placing the strip next to the container and comparing its color changes to the reference provided.

The main advantage of a urine test strip is that they are convenient, easy to interpret, and cost-effective. They can be analyzed within minutes of urine collection in the doctor's office or in the emergency room to provide valuable information. However, what can be learned from a dipstick is limited by the design of the dipstick.

The main disadvantage is that the information may not be very accurate, as the test is time-sensitive. It also provides limited information about the urine, as it is qualitative test and not a quantitative test (for example, it does not give a precise measure of the quantity of abnormality). Therefore, normal and abnormal values are not reported as part of urinalysis results.