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**Human Anatomy & Physiology2 -NURS142**

 **Effect of overhydration and dehydration on**

**Physical and chemical examination of urine**

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**22/12/2021**

**Objectives:**

1. Study and analysis of urine from different samples and note the abnormal results.
2. 2- Knowing the characteristics and components of natural and abnormal urine and the factors that can change them.
3. 3- To see the urine sample on the microscope in order to see the crestal
4. 4- Using devices and equipment to know the properties of urine.

**Introduction**

The kidney, which is part of the urinary system, plays an important role in regulating the chemical content, pH, osmotic pressure and getting rid of waste and dirt produced by the body in the form of urine after several processes, namely filtration, absorption and excretion. The urethra consists of urine in a large proportion of water and some various organic and inorganic materials. In this experiment, we will work on knowing the factors in which urine and kidney functions can change through two experiments, and comparing the results after that, and during the urine analysis, it is possible to know the contents of the urine and its components, and whether there are any other components It is normal and why does it indicate if there is any that the urine analysis tells about a lot of things in the body.



**Results/Data**

**Table (1):-**

**Over hydration**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| GROUPS | GROUP A  | GROUP B  | GROUP C  | GROUP D  | AVE  |
| STUDENT NAME  |  **\_\_\_\_\_** |  **\_\_\_\_\_** | **Ayat**  |  **\_\_\_\_\_** |  **\_\_\_\_\_** |
| Water intake  |  **\_\_\_\_\_** |  **\_\_\_\_\_** | **5L/7h** |  **\_\_\_\_\_** |  **5L/7h** |
| Collection time |  **\_\_\_\_\_** |  **\_\_\_\_\_** | **7h** |  **\_\_\_\_\_** |  **7h** |
| Urine Volume  |  **\_\_\_\_\_** |  **\_\_\_\_\_** | **1700** |  **\_\_\_\_\_** | **1700** |
| Color |  **\_\_\_\_\_** |  **\_\_\_\_\_** | **strow** |  **\_\_\_\_\_** |  **\_\_\_\_\_** |
| PH |  **\_\_\_\_\_** |  **\_\_\_\_\_** | **6** |  **\_\_\_\_\_** |  **6** |
| Specific Gravity  |  **\_\_\_\_\_** |  **\_\_\_\_\_** | **1.030** |  **\_\_\_\_\_** |  **1.030** |
| Unob |  **\_\_\_\_\_** |  **\_\_\_\_\_** | **0.1** |  **\_\_\_\_\_** | **0.1** |
| Bilirubin |  **\_\_\_\_\_** |  **\_\_\_\_\_** | **Negative** |  **\_\_\_\_\_** | **Negative** |
| Ketone |  **\_\_\_\_\_** |  **\_\_\_\_\_** | **Negative** |  **\_\_\_\_\_** | **Negative** |
| Blood |  **\_\_\_\_\_** |  **\_\_\_\_\_** | **Negative** |  **\_\_\_\_\_** | **Negative** |
| Glucose |  **\_\_\_\_\_** |  **\_\_\_\_\_** | **Negative** |  **\_\_\_\_\_** | **Negative** |
| Protein |  **\_\_\_\_\_** |  **\_\_\_\_\_** | **Negative** |  **\_\_\_\_\_** | **Negative** |
| Nitrite |  **\_\_\_\_\_** |  **\_\_\_\_\_** | **Negative** | **\_\_\_\_\_** | **Negative** |

**Table (2):-**

**Dehydration**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| GROUPS | GROUP A  | GROUP B  | GROUP C  | GROUP D  | AVE  | Results |
| STUDENT NAME  |  **Noor** |  **Deema** | **Ayat**  |  **\_\_\_\_\_** |  **\_\_\_\_\_** | **\_\_\_\_\_** |
| Water intake  |  **0** | **0**  | **0** | **\_ \_\_\_\_** |  **0** | **0** |
| Collection time |  **10h** |  **9h** | **7h** |  **\_\_\_\_\_** |  **8.66** | **8.66 ±0.8819(3)** |
| Urine Volume  |  **450** |  **\_500** | **800** |  **\_\_\_\_\_** |  **\_583.33** | **583.33 ±109.29(3)** |
| Color |  **Light + straw** | **dark** | **Dark / amper** |  **\_\_\_\_\_** |  **\_\_\_\_\_** | **\_\_\_\_\_** |
| PH |  **6** |  **\_\_\_6\_\_** | **6.3** |  **\_\_\_\_\_** | **6.1**  | **6.1 ±0.10(3)** |
| Specific Gravity  | **1.020** |  **1.042** | **1.039** |  **\_\_\_\_\_** | **1.033** | **1.033±0.0069(3)** |
| Unob |  **0.8**  |  **0.6** | **0.5** |  **\_\_\_\_\_** |  **0.6** | **0.6±0.088(3)** |
| Bilirubin | **Negative** | **Negative** | **Negative** |  **\_\_\_\_\_** | **Negative** | **\_\_\_\_\_** |
| Ketone | **Negative** | **Negative** | **Negative** |  **\_\_\_\_\_** | **Negative** | **\_\_\_\_\_** |
| Blood | **Negative** | **Negative** | **Negative** |  **\_\_\_\_\_** | **Negative** | **\_\_\_\_\_** |
| Glucose | **Negative** | **Negative** | **Negative** |  **\_\_\_\_\_** | **Negative** | **\_\_\_\_\_** |
| Protein | **Negative** | **Negative** | **Negative** |  **\_\_\_\_\_** | **Negative** | **\_\_\_\_\_** |
| Nitrite | **Negative** | **Negative** | **Negative** | **\_\_\_\_\_** | **Negative** | **\_\_\_\_\_** |

Graph no.1: overhydration VS. D.H values for the classes 3 groups…

**Discussion**

During the experiment last week, two students from each group were asked to collect urine samples, where the first sample collects urine within 24 hours while drinking a large amount of water to calculate the resulting amount and the other sample while fasting and not drinking water for a specified period and the comparison between them and the laboratory began to calculate The quantities for each urine sample, the number of hours of fasting, the period of urine collection, and its color. As for the urine during drinking water, it was lighter, clearer, and yellow, meaning that it was diluted due to drinking a large amount of water, meaning that the more liquid the urine was, the more diluted the urine. As for the sample while fasting It was concentrated and darker in color due to the lack of liquid. After making sure of the color and quantity, the urine samples were placed in the sample file to perform the required tests and find out if there are components and organic materials in the urine and if there is blood or sugar that is, + indicates abnormal results and the presence of problems. Either - it is normal, and then 10 cc of tubes of each type were placed and placed in a centrofegin device, and then closed the device and placed it at a speed of 1500 for 5 minutes to see the deposits that collect at the bottom of the tube and the liquid rises and then is Get rid of a large amount of urine and we keep a small amount to put it in a vortex device, shake it, then take a sample of it and put it on the slide and then for the microscope to see it.

**Conclusion**

urinalysis is a test of our urine. It is used to treat a wide range of disorders, such as urinary tract infections, kidney disease, and diabetes. Urinalysis involves examining the appearance, concentration, and content of urine. For example, a urinary tract infection can make urine appear turbid instead of clear. Increased levels of protein in urine can be a sign of kidney disease detection and management The volume of urine increases when a large amount of liquid is drunk, and the pH is lowered because the hydration sample is light and dry is darker.