

Cuevas Lopez, Rosa

BIO2312 D057

Professor Haque

April 28, 2020

Urinalysis

Urine is the body's liquid waste. Urine goes from the kidneys through the ureters and then down to the urinary bladder. Urination occurs in urine being discharged from the body through the urethra. The urinary system is elaborated more than urination, it also has many processes in the body and all united to maintain homeostasis. The kidney's function is to maintain fluid balance, osmotic pressure, electrolyte balance, and pH. They also stop the buildup of metabolic waste products in the body, which, if it is not excreted, can get to toxic levels, and it will cause a risk for renal failure. The principal structure of the renal system incorporates the two kidneys, which are located in the back of the abdomen. Kidneys contain many million nephrons, which are the central unit of the kidneys. It also includes the ureters, bladder, and urethra.

A urinalysis is a test for urine. It is used to detect and run some disorders such as urinary tract infection, kidney disease, and diabetes. Unusual urinalysis results may point to disease or illness. In this exercise, students will prepare dipsticks and perform a chemical test to determine the characteristics of normal and abnormal urinary components. In this experiment, students were not using real urine but artificial. Each student used regular urine artificial, abnormal urine-1 artificial, and abnormal urine-2 artificial. Each student used a chart provided by the lab manual, which had the Abnormal Urinary Constituents. There are Glucose, Protein, Ketone

bodies, Erythrocytes or RBCs, Hemoglobin, Nitrites, Bile pigments, and finally Leukocytes or WBCs.

The materials for this experiment are; disposable gloves. Artificial urine. Urine specimens numbered “pathological.” Wide-range pH paper. Dipsticks. Urinometer. Test tubes, test tubes rack and test tube holders and finally 10-cc graduated cylinders.

To begin, students were looking for the color, transparency, and odor of the samples. Students acquired a roll of wide-range pH paper to determine the pH of each sample. Students used a fresh piece of paper for each test and dipped the strip inside the urine to be tested more than one time before we compared the color obtained with the chart that was listed before. In this experiment, students used Multistix to do the Urinalysis. Multistix is used to collect samples of a patient's urine. In the research, students had to dip a Multistix into each sample and hold it for a few seconds before removing it. The stick is going to change color depending on the contents of the example.

To interpret the results for the sticks, the smallest part of the stick should be pointing up and the largest down. Start from Glucose at the bottom then up to the leukocytes. For the first given stick which is the Normal Urine Artificial. Glucose is just 30 seconds. It has a blue color which means that it is negative. Flowing with the Bilirubin, only 30 seconds, it tested white. Then Ketones 40 seconds tested negative, which is a light brown, next, Specific Gravity 45 seconds, which resulted in dark green. Blood 60 seconds was a pale yellow: pH orange, 5.0, which is acidic. Proteins 60 seconds was a pale-yellow which is negative. Urobilinogen 60 seconds which was a pale-pink. And finally Nitrite 60 seconds and Leukocytes 2 minutes they both resulted in a pale cream color. The second given stick fist started with Glucose. In this case

Glucose is a brown which means that it is a sign of some disorder. Urinary Glucose may be seen in patients with diabetes. Bilirubin appeared white which is negative. Ketone a light brown negative as well. Specific Gravity was a pale orange. Blood was negative with a color of bright orange. pH Light orange with a pH of 6. Protein tested a dark green with is 30+. Urobilinogen tested yellow. And finally Nitrite and Leukocytes tested in a pale cream color. The last stick for Glucose tested light green $\frac{1}{2}$ 500. Negative Bilirubin. Ketone was pale pink. Specific Gravity was a dark green somewhere in between 1.005. Blood was a very dark green, which means larger and more positive. pH was dark blue, with a pH of 6. pH of 8 means that it is basic or alkaline. Protein was also a dark blue, which means that it has positive protein. Urobilinogen was a pale pink, which means regular 0.2. And finally, Nitrite and Leukocytes both tested white.

The human body is built to maintain a healthy balance of acidity and alkalinity. Lungs and Kidneys play an essential role in this process. A typical pH level is seven, which means neutral on a scale of 0 to 14. 0 is more acidic, and 14 is basic or alkaline. In contrast, proteins are substances necessary for our bodies to function correctly. It is usually found in blood, but if there is a problem with someone with their kidneys, protein can leak into their urine. A tremendous amount of protein in urine indicates kidney disease. Nevertheless, another type of disease that people can have in their urine is Urinary Tract Infections of UTIs. This type of infection is in any part of the urinary system, including kidneys, ureters, bladder, and urethra. Primary diseases involved the lower urinary tract.

To conclude, there are many ways our body can get some diseases or infections. Some of them are UTIs, High or low pH, protein in the urine, and many others. After this experiment that

was done with the Multistix, it showed that Multistix could detect many diseases with just the urine.

References

Human Anatomy & Physiology Laboratory Manual. Elaine N. Marieb and Lori A. Smith.
Twelfth Edition.

Urinary Tract Infection (UTI) MAYO CLINIC

Glucose Urine Level. ScienceDirect/biochemistry and genetics.

Urine MULTISTIX analysis interpretation. Doctor Myhill.co.uk