Urinalysis

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Human Anatomy and Physiology
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Introduction:

Urine is a byproduct that your kidneys make to secrete waste from your bodies.The chemical compound of urine is made of water mostly but also has nitrogenous molecules and also creatinine and other waste components.As cells continue with metabolic waste byproducts are created such as water and carbon di-oxside; as excess amino acids are broken down urea is created.

Urinalysis is a analysis of urine done by chemical, physical and microscopical test for diseases and drugs and much more.Abnormal values show how far a disease has spread throughout your body, diseases such as “diabetes mellitus and insipidus/nephrotic syndrome/glomerulo, pyelo, rephritis,cystitis and urethral infection and renal calculi.

The purpose of our kidneys which is very important for us to live are to cleanse your blood and turn waste into urine.On average each kidney weighs about 160 grams and gets rid of one and a half liters of urine each day.The main functions of our kidneys are to maintain fluid balance, creating hormones to create red blood cells promote bone health and regulate.

Blood pressure, regulate and filter minerals from blood and filtering waste from things like food medications and also toxic substances.

The point of the urinalysis test is to detect diseases and to also find other health problems you might have.The urine test consist of phases such as visual examination which is for color, and a chemical examination which is for test on information about your health and diseases.The Ph balance of urine can vary from 4.5-8, any Ph balance higher than 8 is considered acidic and anything lower than 6 is considered acidic.Ph balance when it comes to urine shows you how your overall health is going and if you might need to adjust certain things like if you aren't drinking as much water or if you aren't eating the right foods.Which might result in you getting kidney stones if not careful.

The following experiment will show you what a urine test can determine just by your urine sample and what is found in your actual urine.

Materials

Urine sample

Cylinder

Urine hydrometer

Urine Reagent strip and container

Gloves

Lab Coat

Lab glasses

Disposable gloves

3 clear bottles

3 Multisticks

Methods:

Step 1:place urine sample into cylinder, enough to fill it up all the way so the hydrometer doesn't sink but ensures that it floats.

Step 2:place a hygrometer in the cylinder with a urine sample and wait for it to stabilize.

Step 3:Look at the meniscus at eye level and record your specific gravity.

Step 4:dip reagent strip in the sample, wipe excess urine off the side of the cylinder

Step 5:let the strip sit over a course of 60 seconds and compare your results to the colors on the strip.

-Label each urine sample "Normal urine artificial" "Abnormal urine #1 and Abnormal urine #2 artificial".

-Color of the urine was first identified and then transparency and Ph balance.

-After that 3 multisticks were used to determine the other two urine sample characteristics, do this 2-3 times for each urine sample.

-After getting the results on the physical characteristics of the urine samples determine if there is a presence or if there isn't one of organic constitutes in the samples you've tested.

-You would have come to the conclusion that the dipsticks revealed that there is Glucose, Ketone, Bilirubin, Protein, Ph balance, Blood, Nitrate, Leukocytes, Urobilnogen and Specific gravity.

-After you get all your results, disregard all your used items and don't forget to wash your hands when you're done.

Results:

Physical characteristics	Normal urine artificial	Abnormal urine #1 artificial	Abnormal urine #2 artificial
Color	Pale yellow	Medium yellow	Medium yellow
Transparency	clear	Clear	Clear
Odor	Had a smell	-	-
Ph balance	6.5	6	8.5
Specific gravity	1.025	1.030	1

Organic Components	Normal Urine Artificial	Abnormal Urine-1 Artificial	Abnormal Urine-2 Artificial
Glucose	Negative	2+	1/2
Bilirubin	Negative	Negative	Negative
Ketone	Negative	15 (small)	5 (trace)
Blood	Negative	Hemolyzed Trace	+++ (large)
Protein	Negative	2000 or more	2000 or more
Urobilinogen	0.2 (normal)	0.2 (normal)	0.2 (normal)
Nitrite	Negative	Negative	Negative
Leukocytes	Negative	Negative	Negative
Icotest	-	-	-
Urea	-	-	-

Conclusion:

In this experiment you should obtain the knowledge of what a urine test is and what it reveals about what's going on in your body.Urine Ph ranges from 4.5 to 8, a person who is more on the healthy side should not have any or little to none organic components in their urine.Abnormal urine sample #1 had a Ph balance of 6 meaning it was on the basic side and abnormal urine #2 had a Ph balance of 8.5 meaning iort was more acidic so therefore that person would probably have a health problems and need to go to the doctor.

Glucose was found in ⅔ of the urine samples, glucose is supposed to be transferred back into the blood stream by transporting through the epithelial cells of the proximal convoluted tubule of the nephron; If this does not happen this can cause renal problems. A renal disease that can cause this to happen is called “Glycosuria” in which the kidneys fail to do its job of using glucose and putting it back into the bloodstream which would lead to diabetes later on.

This lab was important because it shows how with just one simple test you can see whats going on in your body and if you are or are not “healthy”.A urine test can show if you might need a diagnosis of a disease such as diabetes or if there was drugs in your system and so much more. A urine test is beneficial towards you your health and makes you doctors life just a little bit easier so always be on track of your well being because your body matters to your living.

References:

Nile at USF.(March 25,2020) Urinalysis {video}Youtube

https://www.youtube.com/watch?v=ofi9g64pXRY

Nall,Rachel/ Young,Chris “Urine Ph level Test”. “Healthline.com” August 31,2021.

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