Orlando Science Center

Session Two



EMPLOYMENT AND TRAINING ADMINISTRATION
UNITED STATES DEPARTMENT OF LABOR

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RNCPI-CBLT Session 2 Folder Contents

Materials Checklist
Session 2 Overview
Session 2 PowerPoint Slides
Session 2 Urinalysis Chart Worksheet
Session 2 Task Cards

Tips/Reminders for a Successful Off-site

1. Get the directions to the school (and reverse directions, if needed).

2. Get the school contact name and phone number.

3. Make sure that you have all materials necessary for the session (see the Materials Checklist).

4. Ask for petty cash for tolls and gas, if needed.

   Receipt Codes:

Write the receipt code on the receipt before submitting to H. Norton.

   915 – DOL
   935 – WCF
   290 – Regular Off-site

5. At the end of the session, give the projector time to cool before placing it back in the case. Turn it off as soon as you are finished using it. That should give it ample time to cool off before storing it again.

RNCPI-CBLT Session 2 Instructor Reference Sheets
Materials Checklist & Session Overview

Session 2 Materials Checklist

- ❑ Toshiba Laptop[1]
- ❑ Projector
- ❑ Speakers
- ❑ Exit Surveys (30 copies)
- ❑ Task Cards (6 sets)
- ❑ Patient Chart (30 copies)
- ❑ Small plastic cups[2] (20)
- ❑ Sharpie
- ❑ Reagent Strips[3] (1 bottle)
- ❑ Simulated Urine (1 bottle)
- ❑ Sugar
- ❑ Ammonia
- ❑ Vinegar
- ❑ Salt
- ❑ Tweezers
- ❑ Phenolphthalein Solution
- ❑ Box of non-latex gloves
- ❑ Goggles (30)

Notes

1. Confirm that the powerpoint and videos are working properly prior to leaving. Also have the jump drive in the laptop backpack in case of computer problems.
2. The cups should be pre-labeled A and B; but, if not, use the Sharpie marker to do so.
3. Verify that you have enough reagent strips prior to leaving.

RNCPI-CBLT Session 2 Instructor Reference Sheets
Materials Checklist & Session Overview

Session 2 Overview

*** Prep the urine before you start the session. Have all the materials in place before you start.***

Student Learning Objectives

Video: Are You Strong Enough to Be a Nurse?

Statistics and Background Information

- 2006 National Drug Statistics for Age 12-17 (1 slide)
- Brief explanation of Ketones, Protein, pH, Glucose and Blood in urine (5 slides)

Urinalysis

- Explain lab procedure
    1. Record color and clarity of urine samples.
    2. Place strips in urine samples and remove promptly.
    3. Read results between 30 and 60 seconds.
    4. Use phenolphthalein to test urine samples for drugs.
- Show slide of urine strip

Video: Let's Meet Santos (Show the Section 1 video only.)

Debriefing

Exit Quiz

RNCPI-CBLT

Session Two

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Student Learning Objectives

- The student will review concepts from Session One, including Orlando Sci, nursing tasks and vital signs.
- The student will determine the presence (absence) of substances in urine samples and interpret the results of a drug test.
- The students will analyze the behavior of a fictional character and make predictions about future behavior.

Are You Strong Enough to Be A Nurse?



Statistics

and

Background Information

2006 Drug Related ER Visits

Age 12-17

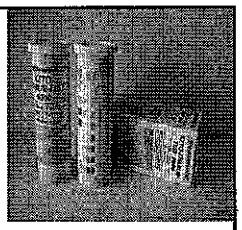
Alcohol In Combination	24,418
Alcohol Alone	52,342
Cocaine	10,984
Heroin	1,661
Marijuana	44,088

Source: U. S. Department of Health and Human Services, SAMHSA, Office of Applied Studies, *Drug Abuse Warning Network, 2006: National Estimates of Drug-Related Emergency Department Visits*. Rockville, MD, 2008.

Ketones



Ketones are substances produced by the body as it breaks down fats for energy. Normally the body obtains the energy it needs from sugars (carbohydrates). Ketones are normally released into the urine. Large amounts of ketones in the urine may signal a dangerous condition that is caused by very high blood sugar levels.



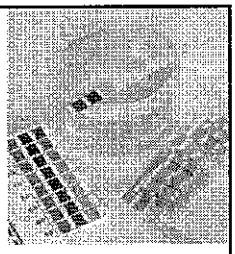
Protein

Protein is normally not found in the urine. Fever, hard exercise, pregnancy, and some diseases, especially kidney disease, may cause protein to be in the urine.



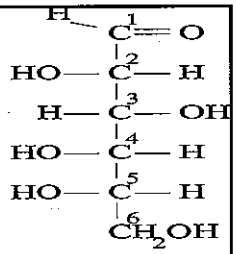
pH

The pH is a measure of how acidic or basic the urine is. A urine pH of 4 is strongly acidic, 7 is neutral (neither acidic nor alkaline), and 9 is strongly basic. Sometimes the pH of urine is affected by certain treatments. Abnormal pH levels could be indication of kidneys not functioning properly.

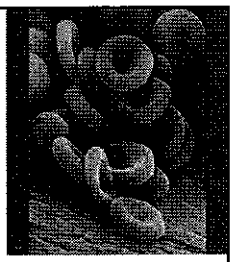


Glucose

Glucose is the type of sugar found in blood. Normally there is very little or no glucose in urine. When the blood sugar level is very high, as in uncontrolled diabetes, the sugar spills over into the urine. Glucose can also be found in urine when the kidneys are damaged or diseased.

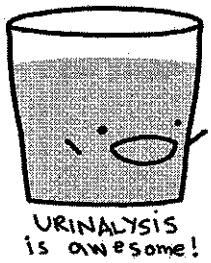


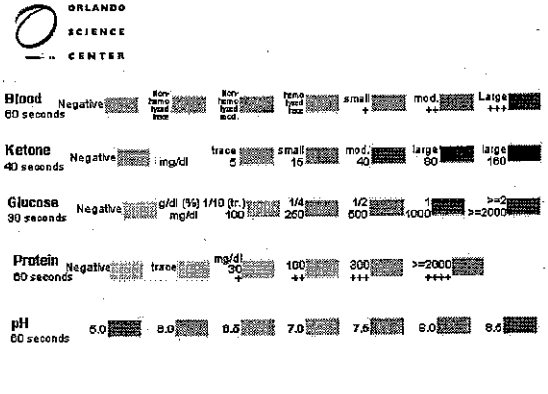
Blood



Blood cells are not found in urine normally. Inflammation, disease, or injury to the kidneys, ureters, bladder, or urethra can cause blood in urine. Strenuous exercise, such as running a marathon, can also cause blood in the urine. White blood cells may be a sign of infection or kidney disease.

Urinalysis





Let's Meet Santos!

Session 2 Debriefing

- What type of information might a urinalysis test provide to a nurse about a patient?
- How is Santos C. Jones similar to you?
- Do you think his social history might change as we get to know him? How?

EXIT QUIZ

RNCPI-CBLT Session Two Task Cards

Urinalysis

Physical Properties

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Physical Properties

1. Put on gloves and goggles.
2. Gently swirl the simulated urine to ensure that it has not separated.
3. Record the color (yellow, amber, etc) of the urine samples.
4. Record the clarity (clear,cloudy, etc) of the urine samples.

RNCPI-CBLT Session Two Task Cards

Urinalysis

Chemical Examination

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Chemical Examination

1. Gently swirl the urine sample to ensure that it has not separated.
2. Use the tweezers to pick up one of the reagent strips.
3. Dip the strip into Sample A and remove immediately.
4. Place the strip on the paper towel.
5. Wait for 30 seconds, but no longer than 60 seconds, then circle present or not present (NP) for each item on your chart.
6. Use a clean reagent strip and repeat the same process for Sample B.

RNCPI-CBLT Session Two Task Cards

Urinalysis

Drug Test

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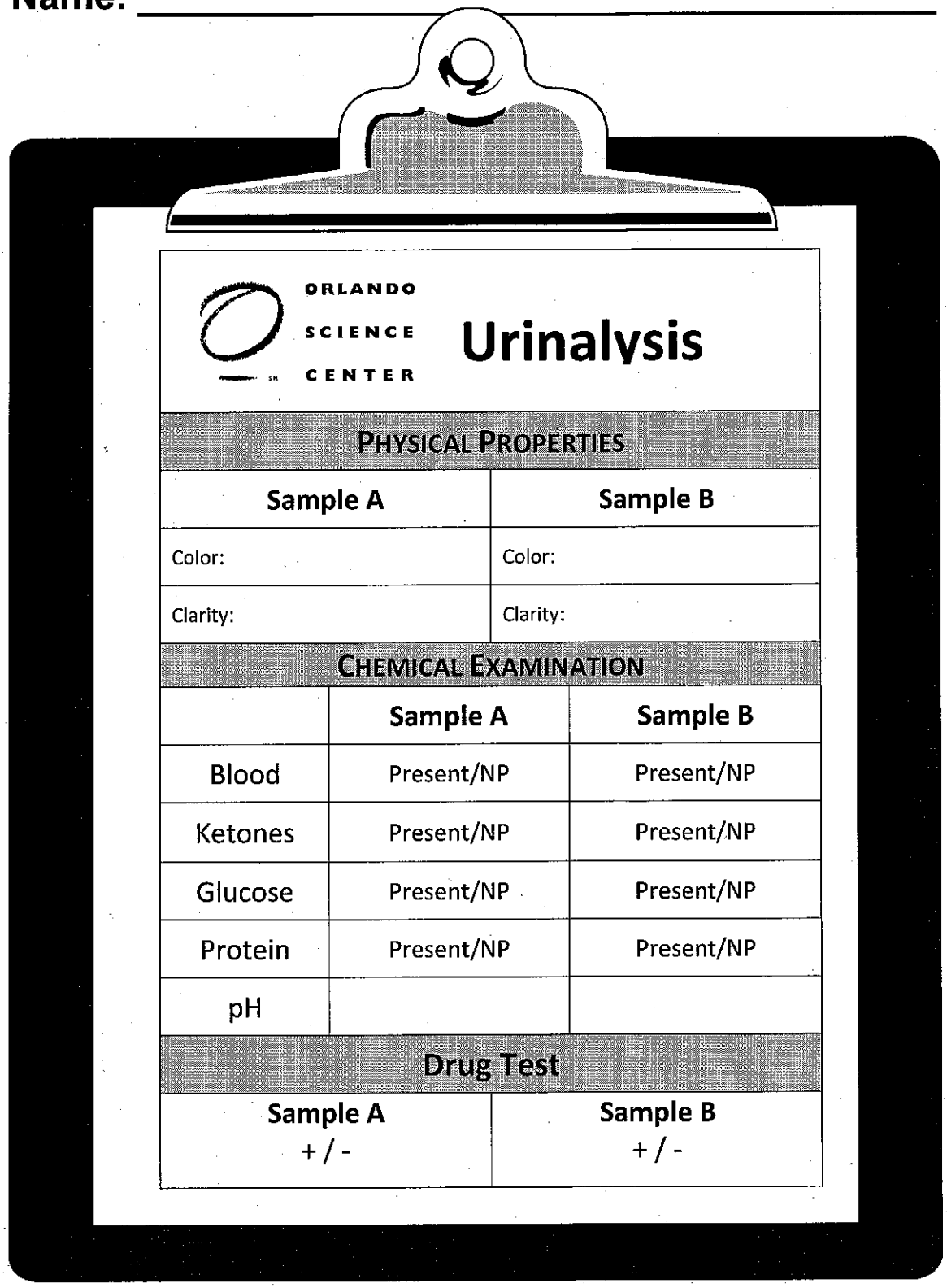
Drug Test

1. Pick up the bottle of phenolphthalein.
2. Squeeze several drops of the solution into urine Samples A and B.
3. If the urine sample does not change color, then the sample is negative for cocaine.
4. If the urine sample turns dark pink/fuschia, then the urine sample is positive for cocaine.
5. Record the results on the chart.

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Regional Nursing Career Pathway
CBJT
High School
Session 2: Urinalysis

Name: _____



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Urinalysis

Physical Properties	
Sample A	**Sample B**
Color:	Color:
Clarity:	Clarity:

Chemical Examination		
	Sample A	**Sample B**
Blood	Present/NP	Present/NP
Ketones	Present/NP	Present/NP
Glucose	Present/NP	Present/NP
Protein	Present/NP	Present/NP
pH		

Drug Test	
Sample A	**Sample B**
+ / -	+ / -

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Regional Nursing Career Pathway Initiative CBJT

Session Two
Background Vocabulary

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- A test that determines the content of the urine. Because urine removes toxins and excess liquids from the body, it can contain important clues. Urinalysis can be used to detect some types of disease, particularly in the case of metabolic disorders and kidney disease. It can also be used to uncover evidence of drug abuse.

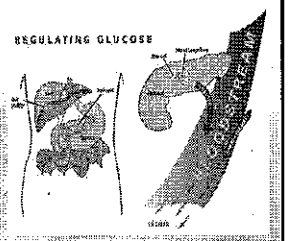
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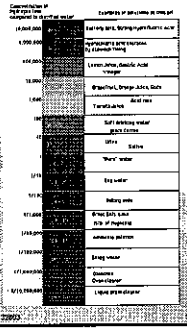
- Liquid waste. The urine is a clear, transparent fluid. It normally has an amber color. The average amount of urine excreted in 24 hours is from 40 to 60 ounces (about 1,200 cubic centimeters). Chemically, the urine is mainly an aqueous (watery) solution of salt (sodium chloride) and substances called urea and uric acid. Normally, it contains about 960 parts of water to 40 parts of solid matter. Abnormally, it may contain sugar (in diabetes), albumen (a protein) (as in some forms of kidney disease), or abnormal amounts of one of it's components.

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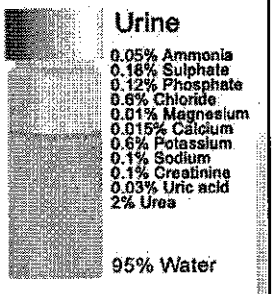
- is the main type of sugar in the blood and is the major source of energy for the body's cells. Glucose comes from the foods we eat or the body can make it from other substances. Glucose is carried to the cells through the bloodstream.



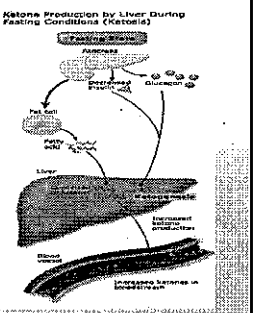
- A measure of the acidity of a solution, numerically equal to 7 for neutral solutions, increasing with increasing alkalinity and decreasing with increasing acidity. The pH scale commonly in use ranges from 0 to 14.



- Phosphate is a mineral that affects the health of bones. When someone has kidney failure they tend to have high phosphate levels. This puts them at risk of bone problems. Too much phosphate in your body can also make you itchy.



- When the body can't use glucose for energy, it uses fat instead. When fats are broken down for energy, chemicals called ketones appear in the blood and urine. This can occur when not enough food has been eaten to provide glucose for energy, or it can occur in diabetes, when the body can't use glucose normally.



- an instrument for determining the specific gravity of urine.

