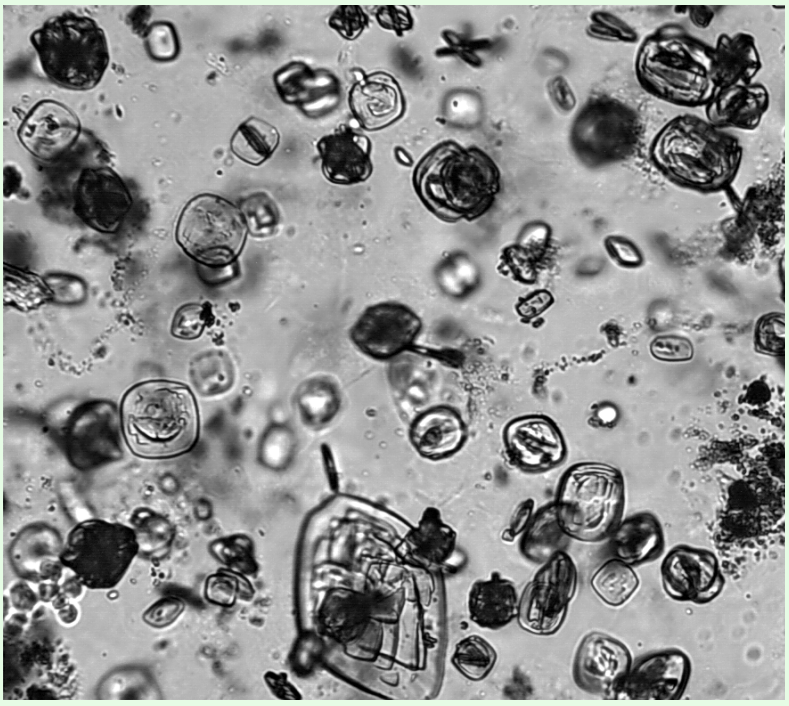
STEM Sims™

Automated Urinalysis



Automated Urinalysis

Do you need an idea for a scientific study?
Try out one of our ideas or make one of your own.

Start learning right now about the body's liquid waste. Take the following brief quiz to see how much you already know about urine. See the bottom of page 4 to check your answers.

1. Injecting urine into the body of an African clawed frog can determine if a person:
   a. has a viral infection.
   b. has a bacterial infection.
   c. is likely to have eye cataracts.
   d. is pregnant.

2. Most people's urine is sterile; that is, their urine is free from bacteria.
   a. true
   b. false

3. Urine has been proposed as a realistic solution to all of the following *except*:
   a. as a flavoring in cigarettes.
   b. as a fuel for vehicles.
   c. as a reactant to make gunpowder.
   d. as a thirst quencher.

4. If stung by a jellyfish, urinating on the stung area of the body will reduce the pain.
   a. true
   b. false

5. About 10% of men admit to having difficulty urinating in a public restroom due to being shy. What is this shy bladder syndrome officially called?
   a. peeophobia
   b. urophobia
   c. paruresis
   d. kidnyphobia

Pee's Rainbow Colors

Human urine color varies greatly depending on a number of factors, including consumption of foods, drinks, and medications; hydration levels; and disorders and diseases present. Can you match the urine color of each sample with its correct factor that may have caused the coloration of the urine? Not all coloration factors will be used and no factor will be matched more than once. Check on the bottom of page 4 to evaluate your answers.

Samples	Coloration Factors
Sample 1	a. consumption of asparagus b. melanoma c. dehydration d. hematuria e. ingestion of methylene blue f. consumption of beets
	
Sample 2	
	
Sample 3	
	
Sample 4	
	

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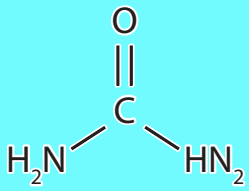
Another Reason *Not* to Smoke

Using tobacco products leads to an estimated 6 million premature deaths each year worldwide. On average, smokers' lives are 10 years shorter than nonsmokers. In the United States, about 1,300 deaths *each day* are associated with cigarette smoking. If that information was not enough to keep you from using these products, how about if you knew what some companies place into the tobacco as a flavoring substance: urea. Urea is an organic compound with the chemical formula CH_4N_2O. The image below shows the structure of urea.



But here's the most important thing you should know about this chemical. Urea is one of the main ingredients in *human urine*. So, the next time you are tempted to try or use cigarettes, think deeply about the almost 70 different kinds of known poisons that are in the tobacco products and/or smoke, including some of the same substances that are in human urine, pesticides, cat urine, disinfectants, and plastics.

Please visit the following webpages for more helpful information:

STEMsims.com

Answers: Page 2 Answers: 1) d, 2) b, 3) d, 4) b, 5) c. **Page 3 Pee's Rainbow Colors Answers:** Sample 1 = c, Sample 2 - d, Sample 3 = f, and Sample 4 = a.

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