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## **Patient information: Collection of a 24-hour urine specimen**

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There are a variety of circumstances in which collection of an accurate 24-hour sample is clinically important. Examples include calculation of the creatinine clearance, estimation of protein excretion, and measurement of the excretion of free cortisol or steroid metabolites in patients with suspected adrenal disease. The following are a set of instructions to be given to the patient for the proper collection of a 24-hour urine specimen. In some instances, the patient will be asked to collect two or even three consecutive 24 hour urines.

- I want you to collect every drop of your urine during each 24-hour period. I do not care what the volume of the urine is, as long as it represents every drop that you pass. If you need to have a bowel movement, you must separate the urine in time or space.

Begin the collection at the usual time that you awaken; the preferred time is about 8 AM in patients with suspected adrenal disease.

- At that time, pass your urine, flush it down the toilet and note the exact time. You will now have an empty bladder and an empty bottle. That starts the collection.

- Collect every drop during the day and night and finish the collection by voiding at exactly the same time the next morning; this last specimen should be added to the bottle.

- The time of the final urine specimen should vary by no more than 5 or 10 minutes from the time of starting the collection the previous morning. If you have to urinate one hour before the appointed time, drink a full glass of water or more so that you can void again at the appropriate time. If you have to urinate 20 minutes before, hold the urine until the proper time. This is essential to the proper interpretation of the test results.

- You will now have a full first bottle, an empty bladder, and an empty second bottle. A second collection can be begun with the next voiding, following the same instructions. Similar instructions apply to a third collection.

The bottle(s) may be kept at normal room temperature for a day or two, but should be kept cool or refrigerated for longer periods of time. The bottle contains a weak acid. If you get acid or urine from the bottle on your skin or clothing, rinse

your skin or clothing immediately with plenty of cold water, and you will have no problem.

We will measure a substance called creatinine in your urine. It will tell us whether each urine collection is complete. Unfortunately, that is all that it can tell us because it is excreted more or less constantly during the day, whereas the rate of excretion of other substances, such as adrenal steroids, may vary markedly. Therefore, loss of two hours of urine at any time of day or night will cause the same loss of creatinine, but the loss of other substances may be great or small. Consequently, we cannot correct the result of an improper collection. We can only recognize that it is improper and disregard the result. This may mean that we have to repeat the test, which can take as long as three additional days.

Proper diagnosis and decision as to appropriate treatment depend entirely upon proper test results. Therefore, I am putting you in charge of making sure that your collections are complete. Do not go anywhere without your collection bottle. Do not let anyone take urine from the bottle or have you collect urine for any other purpose unless you have my permission. This is the single most important thing you can do to assist us in correctly diagnosing and treating your illness.

**WHERE TO GET MORE INFORMATION** – Your doctor is the best resource for finding out important information related to your particular case. Because every patient is different, it is important that your situation is evaluated by someone who knows you as a whole person.

This discussion will be updated as needed every four months on our web site (<http://www.uptodate.com>). Additional topics as well as selected discussions written for healthcare professionals are also available for those who would like more detailed information.

A number of other sites on the internet have information about urine specimen. Information provided by the National Institutes of Health, national medical societies, and some other well-established organizations are often reliable sources of information, although the frequency with which they are updated is variable.

- National Library of Medicine  
(<http://www.nlm.nih.gov/medlineplus>)
- National Institute of Diabetes and Digestive and Kidney Diseases  
(<http://www.niddk.nih.gov>)