

Ascorbic acid is vitamin C. If it is positive, this indicates that the patient recently consumed some fruit or vegetable or pill containing the substance. This is useful in two contexts. First, if this is positive, you cannot believe the results on the protein; ascorbic acid throws the protein colors off. Secondly, this is useful for detecting drug diversion to the black market. You want to know if your patient is selling his medication or if someone is stealing it from him. Give your patient a vitamin C tablet with his other medication, being sure that he is scheduled to swallow it a few hours before you see him. Then test his urine for ascorbic acid. If it is negative, he is selling the drug.

Bilirubin is made by the liver and normally enters the bowel. It is the stuff that makes bowel movements brown. It is also the stuff that makes the whites of the eyes yellow when a patient has liver disease. It shows up in the urine in small amounts before it is visible in the eyes.

Blood is only one element on the strip, but there are two color standards. One is for hemolyzed or broken-apart red cells; the other is for intact red cells. Any amount of blood in the urine is abnormal. If there is a lot of blood in the urine, this by itself will make the protein and glucose tests positive.

Glucose is usually negative. However, if the patient recently ate a large, sweet meal, it might be slightly positive. This is considered normal.

Ketones are found in the urine if the patient is hungry or if he has diabetes out of control. This is a valuable test in the context of feeding programs. If someone seeks free food, his urine should test positive for ketones. If it does not, one should consider sending him packing.

Leukocytes are white blood cells, also known as pus. If there are many of them, the urine is cloudy.

Nitrite and leukocytes both indicate infected urine. The infection might be in the kidneys, in the bladder, or in the urethra, the tube that passes the urine from the bladder to the outside of the body.

pH indicates how acid or alkaline the urine is. This is a function of the patient's recent diet. Any number below 8 or 9 is normal. If the result is 8 or 9, this may indicate a urinary infection.

Protein in the urine means that the kidneys are not functioning normally. The kidneys should be returning protein to the blood stream, not letting it pass through to the urine. If there is blood in the urine, the protein will automatically be positive, since blood contains protein. Only worry about large amounts of protein, and only in the absence of blood.

Specific gravity indicates how dilute or concentrated the urine is. It will be dilute if the patient recently consumed large amounts of water or alcohol. It will be concentrated if he is dehydrated. The numbers compare the urine to plain water which has a specific gravity of 1.000. Any but the most concentrated is normal.

Urobilinogen is a substance produced by the break-down of red blood cells. It is likely to be positive whenever the bilirubin is positive. It is also positive in anyone with a large spleen and in many cases of malaria. There is frequently 1+ urobilinogen in the urine; this is normal. More than 1+ indicates either a liver problem (if the bilirubin is positive) or else destruction of red cells (if the bilirubin is negative).

Checking expired dipsticks

“Urine”	Elements that should be positive
Serum, taken off the top of clotted blood	Blood, protein, glucose
A couple drops of nail polish remover in a little water	Ketones
A sliver of salami, soaked in a little water for a half hour	Nitrites, maybe blood
Urine from a patient who is jaundiced and has a tender liver	Bilirubin, maybe urobilinogen
A little pus in a little water	Leukocytes, blood
Urine from a healthy person who is very thirsty	Specific gravity should be high
A vitamin C tablet dissolved in a little water	Ascorbic acid
Urine from a patient with an enormous spleen, or a malaria patient during a high fever	Urobilinogen

Note that the pH element never goes bad.