



Do you know your urine colours ?

I am hoping that most of you have pretty solid stomachs and don't mind the above food color reference when it comes to urine. The topic is also somewhat seasonal as discolored urine is often noticed when it snows. Let's Investigate!

Pinkish-red/red/reddish-brown urine is most often due to macroscopic hematuria however hemoglobinuria, porphyrins and myoglobinuria can cause red to reddish brown urine.

Reddish-brown to brown urine can be caused by myoglobinuria, hemoglobinuria, methemoglobinuria (can be brown to black), and lots of calcium carbonate crystals in the urine of horses or rabbits causes a brown color.

Hematuria may result from pathology anywhere along urogenital tract as well as secondary to coagulopathies.

With true hematuria, the urine supernatant will be clear, and a red pellet noted in the sediment. Given it is possible for intact cells to lyse in transit (especially in dilute alkaline urine) it may be necessary to check a freshly voided urine.



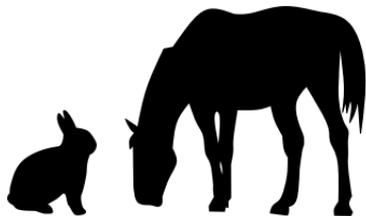
With myoglobin, the color of the supernatant remains the same after centrifugation and the serum is normal in appearance. The CPK is typically increased because of associated muscle injury. A significant anemia and hemolyzed serum (hemoglobinemia) is seen with intravascular hemolysis associated hemoglobinuria.



Rare porphyria syndromes can cause red urine due to the excretion of porphyrins. These pigments also accumulate in other tissues like the teeth!



Benign pigmenturia can be seen in horses and rabbits due to diet. Cruciferous vegetables (edible Brassica plants) such as cabbage, radish, turnip, mustard, cauliflower, and broccoli are associated with red urine in rabbits.



Horse urine can change color after being voided due to the presence of plant metabolites (pyrocatechines) in the urine that turn a red or orange color when mixed with oxygen. Large consumption of beets could theoretically cause red urine in dogs that eat large quantities. Red food dyes are also on the list.

What causes green urine?

Causes for green urine includes bilirubin, biliverdin (birds/reptiles), and Pseudomonas infection. Previous hemorrhage can produce green urine as the hemoglobin is broken down. Given interpreting urine color is subjective, a greenish hue has been noted when there is urate crystalluria. Published drugs in people that can cause green urine include Propofol, Methylene Blue, food colouring, Amitriptyline, Riboflavin and Methocarbamol among others. Eating lots of asparagus can also turn your urine green!



If the rainbow of urine colors fascinates you -check out this [twitter post](#) from a human MD for some fun slides.