What is it?
“Exercise-induced hematuria” is a benign condition in which blood is present in the urine (“hematuria”) following exercise. This has also been called “runner’s bladder,” “marathoner’s hematuria,” and “stress hematuria.”

Causes
Exercise-induced hematuria may have various causes, ranging from relatively harmless ones to more worrisome ones. In general, if the urine clears 72 hours after exercise, there is no need to further investigate. However, some causes do need to be investigated, particularly if the blood in the urine keeps appearing, or does not clear after 72 hours. Sometimes, the breakdown products of red blood cells and muscles may appear in urine, making the urine appear much darker, and this may be mistaken for actual blood. Some foods may color the urine reddish, and some medications, such as blood thinners, may lead to actual blood in the urine.

For most cases of exercise-induced hematuria, the causes are related to the intensity and duration of activity, as well as the hydration status of the athlete. Longer and more intense events have been known to more likely cause hematuria. It is most common in runners, especially those running more than 10,000 meters. Sometimes, hematuria is related to a traumatic injury, such as a direct blow or a fall.

Risk factors
Risks of developing hematuria after exercise include long endurance events, very intense events, and/or poor hydration. Weight-bearing, intense activities appear to place an athlete at higher risk than other, less weight-bearing, forms of exercise. Any of these factors alone or any combination of them may result in hematuria. Any direct impact to the kidneys, bladder or urethra could potentially cause traumatic hematuria as well. Hematuria in itself can be caused by other factors apart from exercise, such as urinary tract infections, the presence of a stone in the urinary tract, kidney disease, among others; athletes with such conditions may be at higher risk of exhibiting blood in their urine after exercise. As above, taking some medications may predispose an athlete to exhibiting blood in his/her urine.

Symptoms
Apart from having blood in the urine, athletes with exercise-induced hematuria usually have no other symptoms. Occasionally, athletes will have pain just above the front region of the hip. If the hematuria is related to direct trauma, then pain at the site of impact is expected.
**Sports Medicine Evaluation**
The sports medicine physician will perform a thorough history and physical exam of the athlete, often focusing on the genitourinary and gastrointestinal systems of the patient. Evaluation of a urine sample is needed to investigate hematuria. This will be done with both a urinalysis (which looks for abnormal urine contents) and with a microscope, for a more detailed look at the urine. Further investigation may be needed depending on the results of these tests. Athletes may require repeat urinalysis testing until their hematuria has resolved. In cases where trauma is involved, imaging such as a computed tomography (CT) scan or ultrasound may be needed.

**Treatment**
In cases where there is no trauma, exercise-induced hematuria usually resolves within 24-72 hours of rest after the athletic event. In these cases, no specific treatment is necessary. If hematuria persists longer than 72 hours or continues to occur with strenuous exercise, further investigation may be needed. In cases where trauma is involved, treatment will depend on the severity of the trauma.

**Injury prevention**
Recommendations for preventing hematuria include staying well hydrated and running with a bladder that is not completely empty. In contact sports, wearing the proper protective equipment is necessary.

**Return to play**
In cases where there are no symptoms, athletes may return to play if the hematuria has resolved within 72 hours. If not, medical clearance from health care personnel is advised. In cases where trauma is involved, returning to play may take longer and will depend on the severity of the injury.

**References:**