

FOOTSTRIKE HEMOLYSIS (March Hemoglobinuria)



■ ■ ■ Description

Footstrike hemolysis is a condition seen most often in distance runners and is characterized by the breakdown of red blood cells in blood vessels. The breakdown is related to multiple factors, including the hardness of the running surface, elevated body temperature, and increased fragility of older red blood cells. In most cases the amount of red blood cell destruction is mild and does not result in anemia, iron deficiency, or hematuria. The diagnosis is usually made by measuring the serum haptoglobin level or by demonstrating that hemoglobin is present in the urine within hours to days of intense exercise.

■ ■ ■ Common Signs and Symptoms

- Usually, no signs or symptoms
- Iron deficiency anemia (decreased red blood cells due to lack of iron)
- Hemoglobinuria (hemoglobin in urine)
- Reticulocytosis (increased reticulocyte count)
- Hemolytic anemia (decreased number of red blood cells due to destruction)

■ ■ ■ Causes

- Hard running surfaces
- Worn-out running shoes
- Inherited abnormalities of red blood cells (hereditary spherocytosis)

■ ■ ■ Risk Increases With

- Worn-out running shoes
- Hard running surface
- Occasionally, aerobic dancers and triathletes
- Elite athletes

■ ■ ■ Preventive Measures

- Do not allow running shoes to wear out.
- Use shock-absorbing insoles to reduce impact when running.
- Run on softer surfaces.
- Change running style.
- Do not rapidly increase running program.
- Running in cooler temperatures may reduce the severity of the condition.

■ ■ ■ Expected Outcome

In the majority of athletes, footstrike hemolysis is a laboratory diagnosis and is rarely clinically significant. Athletes are

expected to return to play after the condition is diagnosed with little modification of activity.

In rare cases, athletes can become anemic and may have to alter their training program or stop playing the sport.

■ ■ ■ Possible Complications

- Hemoglobinuria (hemoglobin in urine)
- Iron deficiency anemia (low iron content in body; therefore no red blood cells are made)
- Hemolytic anemia (anemia caused by breakdown of red blood cells)
- Usually, no complications

■ ■ ■ General Treatment Considerations

- Do not allow running shoes to wear out.
- Use shock-absorbing insoles to reduce impact when running.
- Run on softer surfaces.
- Change running style.
- Do not rapidly increase running program.
- Running in cooler temperatures may reduce red blood cell destruction.

■ ■ ■ Medications

Medications are not usually indicated for this condition. They may be used to treat the complications of the condition, such as prescribing iron for iron deficiency anemia.

■ ■ ■ Activity

- Activity is not usually restricted if other aspects of exercise can be treated.
- If hemolysis is severe, a period of rest or cross-training is appropriate.
- Sudden increases in running should be discouraged.
- Running in the heat may be discouraged.

■ ■ ■ Diet

No changes in diet are known to be effective.

■ ■ ■ Notify Our Office If

- You experience a change in your capacity to exercise
- You are found to have an unexplained anemia on a laboratory test
- There is a change in the color of your urine
- You have a history of red blood cell abnormalities and have increased fatigue, chest pain, or a feeling of your heart beating rapidly in your chest

Notes:

(Up to 4400 characters only)

Notes and suggestions