

APRIL / 2024

# Laboratory Services

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**NATIONWIDE  
CHILDREN'S®**

*When your child needs a hospital, everything matters.*



## National Medical Laboratory Professionals Week April 15-19, 2024

National Medical Laboratory Professionals Week is an annual celebration of the medical laboratory professionals and pathologists who play a vital role in every aspect of health care.

Our team at Nationwide Children's Laboratory is proud to play a vital role in your patient's care by providing impactful, accurate results.



## Ferritin Testing: What Parents of Young Athletes Need to Know

Young athletes work hard to balance conditioning with nutritional needs to maintain a high level of performance. Iron deficiency is a common problem; athletes need more iron than non-athletes and when they don't get it,

performance can decline. Some parents are using ferritin testing to make sure their young athletes are on the right track. Is this recommended as a practice for all young athletes?

## What Is Iron Deficiency?

Iron deficiency (ID) is the most common nutritional deficiency and most common cause of anemia in the world, affecting 2.3 billion people. It is one of the few nutritional deficiencies that remains significantly prevalent in industrialized countries. Anemia is a late finding of iron deficiency, and many symptoms of iron deficiency can be present even if you are not anemic.

Common symptoms of ID, even if no anemia is present:

- Fatigue
- Hair loss
- Muscle weakness
- Exercise intolerance
- Difficulty concentrating
- Restless legs/sleep disturbances
- Learning difficulties
- Headaches
- Depression/mood changes

- Pica (an eating disorder in which non-food items are craved and consumed; cravings for ice are commonly seen with ID)

## Can Iron Deficiency Affect Athletic Performance?

Absolutely. Many patients report that exercise intolerance is one of the first symptoms of ID that they notice. Runners may notice their race times increase even when they haven't changed anything about their practice regimen.

Athletes can have increased iron needs due to loss of iron in sweat, increased oxygen needs leading to increased hemoglobin production, and iron loss from microscopic gastrointestinal bleeding, to name a few. They can also have higher levels of hepcidin, a hormone that prevents adequate iron absorption by the gut and iron utilization.

## What Is Ferritin?

Ferritin is a major iron storage protein and is the most used biomarker of total body iron stores. Ferritin is also an acute phase reactant, meaning that it can be elevated when there is inflammation present in the body like during acute or chronic illness.

## What Does a Ferritin Test Tell You?

A low ferritin value is indicative of iron deficiency. There are no other reasons for ferritin to be low. For young athletes, I aim for a ferritin of at least 30-40. Every child should have a ferritin of at least 15.

A high ferritin value can mean there is a lot of inflammation present, or it can mean that someone has too much iron in his or her body (iron overload). Iron overload is much less common than iron deficiency, especially in children and adolescents. Iron overload typically only occurs in people with a genetic disease called hereditary hemochromatosis or people that receive many blood transfusions for cancer or inherited blood disorders.

Other iron studies include total iron binding capacity (or transferrin), iron saturation (or transferrin saturation), and serum iron. Serum iron is dependent on recently ingested iron and is the least reliable among the iron studies. While iron deficiency can be identified by these other studies, ferritin is the most reliable.

# Is a Ferritin Test Safe for My Young Athlete?

A ferritin test is very safe. There is a small risk of bleeding or bruising at the site of the venipuncture (where the blood is taken from the vein).

All females (not just athletes) who are having menstrual cycles should have ferritin testing. If your athlete is having any symptoms of iron deficiency, measuring ferritin should be considered. While males are at lower risk for iron deficiency than females, all male endurance athletes should be tested. Ferritin testing should be the primary iron study performed, as it is the most reliable to test for iron deficiency.

The range of normal values for ferritin can vary based on the laboratory the test is run. These values are created using a group of a “normal” control blood samples taken from healthy people. Because the occurrence of iron deficiency is so high in children and adolescents, the value for ferritin can be distorted. It is possible that your child may have a value that looks “normal” (doesn’t have a flag next to it to let you know it is abnormal), but it still indicative of iron deficiency. It is important to pay attention to the actual number for ferritin even if it isn’t flagged as abnormal.



## Meet the Expert

Amanda Jacobson-Kelly, MD, MSc  
*Hematology/Oncology*

Amanda Jacobson-Kelly, MD, MSc is an Assistant Professor of Pediatrics in the Division of Hematology/Oncology at Nationwide Children’s Hospital/

The Ohio State University College of Medicine



## Getting to Know your Client Service Representatives

Holly has worked at NCH and in Client Services for the past 12 years. She has a Bachelor’s Degree in Chemistry and two Associates degrees, in Medical Laboratory Science and Occupational Therapy. Holly is married with three children, a 19 year old daughter who is attending college in upstate New York, and two teenage boys.

She also has a beagle named Jake and a moody cat named Ninja. In her free time, Holly enjoys listening to copious amount of audio books, which helps pass time on her one hour commute to work. She also enjoys watching crime dramas. When asked to share her top advice for clients, Holly said “whenever possible, collect the larger tube. It is difficult to add on testing when we only receive a microtainer.”

Did You Know?

## Need STAT Results Fast?

Nationwide Children’s Laboratory Services continuously strives to be on the cutting edge of medical technology to deliver rapid and superior test results to you and your patients. Staff working at the Close To HomeSM Centers or Laboratory Service Centers are dedicated to patient care and performing laboratory testing. There are many tests that can be ran STAT at these facilities and several methods to obtain STAT test results fast to you:

- EMR – Electronic Medical Records
- ChildLink™ – Nationwide Children’s Laboratory Services online access center for tests and services
- Faxing STAT Results – Indicate on your patient’s test requisition/order that you would like to have your STAT results faxed to the provided number

**Note: All critical and alert test results will be called to your office.**

## Do You Sometimes Struggle with Capillary Blood Collections?

Proper collection of blood specimens is essential for accurate sample analysis and reporting of patient results. Did you know that Nationwide Children’s Laboratory Services provides in-office training for capillary blood collections? You can schedule a training with one of our Account Representatives who are exceptionally proficient in collecting capillary blood samples by calling Laboratory Services at (800) 934-6575.



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## How can Nationwide Children's Laboratory Services help your practice?

If you would like to become a client or learn more information about Nationwide Children's Laboratory Services, contact us at (800) 934-6575 or visit our website at **NationwideChildrens.org/Lab**. Would you like to receive the Nationwide Children's Laboratory Services Newsletter electronically? Please e-mail us at **LaboratoryServices@NationwideChildrens.org** and let us know!

Lab Account Representatives are available via email to assist with any questions or concerns.

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