



KANAKIA
Health Care

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Iron Deficiency Anemia

What is anemia?

Anemia means that your child has decreased amount of hemoglobin, or the pigment which makes human blood red. This could be due to a number of reasons.

What is iron? Why is this metal important for humans?

Iron is a metal which is found abundantly on the earth. Unfortunately, it is present in a form in which it cannot be utilized by the human body, resulting in a deficiency. Iron is required by the human body to make hemoglobin. It forms one of the building blocks of hemoglobin.

What is hemoglobin?

Hemoglobin is an iron-rich protein found on red blood cells that carries oxygen throughout the body. It also carries carbon dioxide from the body to the lungs, where it is exhaled.

What is iron deficiency anemia?

The decrease in the hemoglobin content of the body, due to either absence or a deficiency of iron in the diet is called as iron deficiency anemia (IDA). It generally develops over time. With a lack of iron in diet, the body uses the iron it has stored. When the iron stores get used up, anemia develops.

Is it a serious problem?

No. IDA is not a serious problem. It can be managed by simple iron replacement/ supplementation therapy.

How common is the problem?

It is a very common problem in children, adolescent and women. It is believed that up to 60% of children suffer from this disorder.

Why does it occur?

Diet is the only source of iron for the humans. Thus if the diet has inadequate iron content, it will result in IDA. This is the commonest cause of IDA. Other causes include:

- Chronic blood loss, like bleeding in the intestines or stomach commonly called gastrointestinal bleeding
- Increase in requirements as during the puberty growth

The cause will vary according to the age of the patient.

What causes IDA in very young children?

In young children between 9 months – 1 ½ years, milk often forms the main constituent of the diet. Bottle feeding which was initiated at 2-3 months or even earlier is continued till the child is older. The child finds it easy to have milk from the bottle; he does not attempt to eat solid foods. The parents too are worried that the child is not eating well; they allow the

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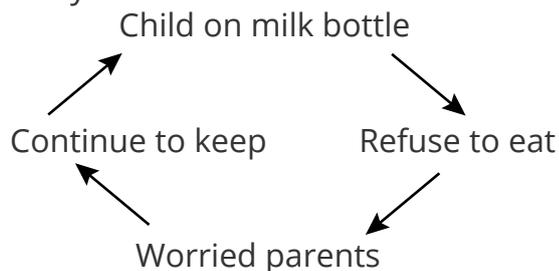
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child to continue bottle feeding. It becomes a vicious cycle.



As milk is an "iron poor" food, it results in IDA.

Can IDA occur at 2-3 months of age?

No. Till this time the child has adequate stores of iron, which he accumulates from the mother during intrauterine life. Once these stores are depleted the child faces the threat of IDA.

Thus iron supplementation during pregnancy, good weaning (that is starting foods other than milk) go a long way in preventing IDA. Another setting in which IDA can occur early in life is prematurity. That is if the child is born premature he does not have the time to accumulate the iron and build up his stores. In this case IDA can occur early.

Why does it occur in older children?

The commonest cause is food faddism, children don't like nutritious foods and fast foods replace normal diet. Also intestinal worms may cause loss of blood in the stool resulting in IDA.

How will I know that my child has IDA?

The signs and symptoms of IDA are pallor. That is the child looks pale. Also the child may be irritable and may feel tired or he may be listless, not interested in surroundings and he may refuse to eat normally.

How does the doctor know that the child has IDA?

The doctor will examine the child and clinically make diagnosis of IDA if

- The child is pale
- If there is no liver, spleen, or lymph glands.
- If there are no spots on the skin suggesting bleeding.

In addition, the doctor will order certain tests to confirm that your child has IDA.

What are the tests to find out whether my child has IDA?

The following tests are to be performed to diagnose IDA:

- Complete blood count which
 - Shows low hemoglobin + a low red blood cell count.
 - The MCV + MCH are both low + the child has a hypochromic, microcytic anemia.
 - All other counts are normal.
- Serum iron studies which include
 - Serum iron, total iron binding capacity (TIBC) and transferrin saturation.
- Stool test for occult blood + for eggs of worms.
- Serum ferritin - which tells the doctor,



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about the status of iron stores in the body.

All the above tests except serum ferritin should be done before starting iron otherwise results will be erroneous. Upper endoscopy and colonoscopy may have to be done to find cause of gastrointestinal bleeding.

Are there any other tests that can be asked for?

Yes. Iron deficiency anemia can mimic a disorder called as thalassemia, which is a genetic disease. To rule out this disorder the doctor will ask for hemoglobin electrophoresis of not only the child, but also the parents.

What is the treatment of IDA?

The treatment for IDA.

- To correct the cause of IDA
- Iron stores can be replenished by
 - Medications - These are available as tablets and syrups in various manes and various combinations.
 - Diet - By eating iron rich foods, iron stores can be replenished.

How should I give the iron medications?

The dose will depend on the weight of the child.

Recommended daily dose is

- 6 mg/kg/day of elemental iron.

- Different preparations have different concentrations of iron. Great care must be taken by the parents and the doctors to give the required amount of iron.
- To give an accurate amount of iron syrup, a disposable syringe may be used.
- Do not give iron preparation with milk or food, as the iron absorption will be affected.
- It is best to give iron in between meals.

What is the diet recommended in a case of IDA?

The diet should be rich in iron. Some of the foods that can be given to the child are:

- Dry fruits, especially almonds
- Non vegetarian foods like mutton, chicken and fish
- Green leafy vegetables such as methi, spinach, etc (Can be given to the child in the form of palak soup or palak parathas. Methi can be given as a vegetable or as parathas)
- Brinjals
- Jaggery - in the form of chikki or "gol papadi" is tasty and accepted readily by children.

- Fruits - chikoos, bananas

Foods which do not contain iron are

- Milk and milk products
- Eggs
- Rice
- Coconut water
- Fruits such as oranges, mosambis + other citrus fruits.

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How long will the treatment continue?

The treatment will continue for 3 months after the hemoglobin becomes normal to replenish the iron stores.

Will blood testing have to be done during the treatment?

Yes; a complete blood count once in 15 days to 1 month will help the doctor to know whether the hemoglobin is rising well. If it is not rising, then other investigations may be necessary to rule out other causes of anemia.