SiderAL

E-BOOK

Women

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Low haemoglobin during pregnancy: what causes it?

What **causes low haemoglobin during pregnancy**? And what are the remedies? Let's find out how to overcome **low haemoglobin** during **pregnancy** and what to do to **maintain normal haemoglobin levels in the blood** during the gestation period.

Why can low haemoglobin values be measured during pregnancy?

Haemoglobin is a very important protein for the human body. It is present in **red blood cells** (erythrocytes) and regulates the transport of molecular oxygen and carbon dioxide in the blood. At the molecular level, haemoglobin consists of four polypeptide chains that bind a haem group, a chemical complex that contains an iron ion (Fe^{2+}).

Since iron is an essential component of the molecular structure of haemoglobin, an **iron deficiency** may also lead in many cases to **low haemoglobin** values.

What are normal haemoglobin values during pregnancy?

In general, haemoglobin values in women are between 12 and 15.5 g/dL. In pregnancy, due to the increased need for iron, the minimum value drops to 11 g/dL whilst the maximum value is 14 g/dL. With haemoglobin values close to the lower limit of the range, gynaecologists may suggest an iron-based food supplement to mitigate the deficiency of this nutrient. **When the haemoglobin values fall below 11 g/dL**, action must be taken to bring the values back to normal as soon as possible.

Low haemoglobin in pregnancy is often associated with **iron deficiency.** Indeed, 95% of anaemias in pregnancy are **iron deficiency anaemias** (sideropenic anaemias).

Low haemoglobin during pregnancy: causes

The main causes of low haemoglobin during pregnancy are:

- **low iron intake with diet** throughout the gestation period;
- an iron deficiency, albeit slight, in the pre-conception period;
- gastrointestinal conditions or infections that cause **iron malabsorption** through diet;
- anaemias of hereditary origin (e.g., Mediterranean anaemia) characterised by low levels of haemoglobin in the blood.

How do you maintain normal haemoglobin levels during pregnancy?

If **blood tests** show a **low haemoglobin** condition **during pregnancy**, the gynaecologist will assess the most suitable approach to bring the haemoglobin blood values back to normal. Your doctor will assess the causes of the lowering of haemoglobin levels in your blood and suggest remedies to restore and maintain normal blood haemoglobin levels.

Usually, in order to prevent **low haemoglobin during pregnancy**, it is quite common for gynaecologists to provide a prophylaxis that includes **iron-rich diet**.

Low haemoglobin and iron deficiency during pregnancy

A rather common problem during gestation is precisely iron deficiency. Normally, a woman of childbearing age needs 14 mg of iron per day. During pregnancy, this amount can increase to as much as 30 mg of iron daily. The iron consumed through diet helps to satisfy both the iron needs of the mother and the unborn child. Attention needs to be paid, however: not all the iron consumed through diet is absorbed in the same way by our body. Haem

iron, present in animal-based foods, is more easily absorbed than non-haem iron, present in plant-based foods.

To facilitate the absorption of non-haem iron, **foods rich in vitamin C**, a nutrient that promotes the intestinal absorption of inorganic iron, can be included in the diet. At the same time, it is not recommended to eat foods rich in iron together with foods that can reduce or hinder the absorption of **non-haem iron**, such as milk and dairy products, foods containing tannins (tea and coffee), phytic acid or phytate (nuts and grains) or oxalic acid or oxalates (spinach, cabbage, chard).

When the diet is not sufficient to maintain **normal iron levels during pregnancy, you can contact your doctor or pharmacist who will be able to recommend a nutritional supplement** to meet **your body's increased iron requirements.**

High iron in pregnancy: what are the symptoms and what does it involve?

Controlling normal levels of **iron in the blood** during pregnancy is important for the well-being of both the mother and the baby. Blood tests help to detect an **iron deficiency or overload**. **Iron deficiency in pregnancy** is more frequent than overload, but it is also more easily manageable than **high iron in pregnancy**, which is a condition that must be treated promptly.

What are the iron values to pay attention to during pregnancy?

Iron is an essential nutrient for our body: it plays a role in numerous metabolic processes and promotes the formation of haemoglobin, myoglobin and certain enzymes (cytochromes). It also contributes to the **normal cognitive development of children** and the **normal function of the immune system**.

Iron values in the body are measured through **blood tests.** There are three parameters that are measured: **serum iron** (quantity of circulating iron related to **transferrin), transferrin** and **ferritin levels**. Reference intervals may vary depending on gender, age and specific physiological conditions, such as menstrual cycle and pregnancy.

In women, the reference values are as follows:

- **Serum iron:** 50 - 160 mcg/dL (micrograms per decilitre)
- **Transferrin:** 250 - 380 mg/dL (milligrams per decilitre)
- **Ferritin (sometimes referred to simply as "Iron"):** 11 - 300 mcg/L (micrograms per litre)

During pregnancy, the daily iron requirement is higher and therefore it is more frequent to find cases in which **iron is low** rather than cases in which **iron is high**. When **iron is low**, we are dealing with a **deficiency** and the doctor will assess the most suitable approach to **restore normal iron values**. It is common for a doctor to suggest **iron supplements during pregnancy** to support the diet. However, in some cases, iron and serum iron may increase and exceed the maximum values provided for in normal health conditions. If **high iron during pregnancy** occurs, it is important to consult a doctor.

High iron during pregnancy: causes

The causes of **high iron during pregnancy** are usually not related to gestation, but are usually due to hereditary diseases, or to certain types of **anaemia characterised by a reduced production of red blood cells.**

In other cases, **high iron** can be related to an inflammatory state or metabolic disorders that are usually related to conditions that are unrelated to the pregnancy itself.

In general, it is difficult for diet or supplements to cause an **increase in blood iron concentration.** Our body, in normal health conditions, has mechanisms that regulate the intestinal **absorption of iron.** These mechanisms promote iron absorption in cases of deficiency or prevent its assimilation when ferritin and transferrin (iron storage and transport molecules) are saturated.

High iron during pregnancy: what should you do?

A **high level of iron in the body** can cause damage to cells and organs of a different severity, depending on the amount of excess iron. **High serum iron during pregnancy** should be kept under control and, in the most serious cases, it is important to consult a **haematologist** (a physician specialising in blood diseases) to assess a therapy able to bring **the iron values** in the blood back to **normal**. In cases of **high iron during pregnancy**, your doctor may

advise you to moderate the intake of iron-rich foods or foods that increase their absorption (such as foods rich in vitamin C).

High iron during pregnancy: consequences

The **most common symptoms of high iron** are asthenia, liver enlargement and nervous system disorders. Amongst the risks related to high iron during pregnancy there is also an increased possibility of developing gestational diabetes. It is always recommended to consult a doctor or haematologist in cases of **high iron during pregnancy.**

Iron supplement during pregnancy: when is it needed?

During pregnancy, the need for iron increases and, without the right nutritional support, the likelihood of a **deficiency of this essential nutrient** also increases. A varied and balanced diet is the basis of an adequate daily iron intake. However, in some cases, diet is not sufficient to maintain normal levels of iron in the body. Let's find out when you need an **iron supplement during pregnancy.**

Iron deficiency in pregnancy

During pregnancy, the **body's need for iron increases** to support the proper development of the foetus. In the last trimester, in particular, the foetus also begins to accumulate the amount of iron that will constitute its reserves after birth. During pregnancy, therefore, the risk of **iron deficiency** may increase.

Iron balance and distribution within the body are measured through three main parameters which are **serum iron,** page **transferrin** and **ferrinin levels**. Sometimes, in the presence of an iron deficiency, **low haemoglobin** values are also monitored**.** Normal haemoglobin values in pregnant women are: 11 - 14 g/dL (grams per decilitre). Values below 11 g/dL define an **anaemia condition** which, when caused by **iron deficiency**, is known as **sideropenic anaemia**.

Iron deficiency during pregnancy manifests itself with symptoms such as:

- general tiredness and fatigue;
- sleep disorders;

- headaches, migraine, irritability;
- fragility of nails and hair;
- pale skin and mucous membranes;
- shortness of breath and tachycardia.

In order to avoid depletion of the mother's iron storage, an increased intake of this nutrient is required through diet. **Iron-rich foods** such as red meat (turkey, horse, beef), liver, spleen, green leafy vegetables, legumes, whole grains and oily fish may be useful, but, in some cases, it is necessary to support the diet with dietary supplements that can **address the increased body iron requirements typical of pregnancy.**

Iron supplements during pregnancy: what they contain

When expecting a baby and even afterwards, if you are breastfeeding, it is always recommended that you always consult your doctor before taking any type of supplement. An **iron-based supplement during pregnancy** is recommended by a doctor or gynaecologist when diet alone is not sufficient to maintain normal iron values.

Iron supplements suitable for pregnancy usually contain also other nutrients that **support the proper development of the foetus** and **promote normal haematopoiesis** (red blood cell formation) in the mother and the unborn child. Amongst the most common nutrients are **folic acid and folates** (vitamin B9) and **vitamins B6** (pyridoxine) and **B12** (cobalamin) and sometimes **vitamin C**, which increases the **absorption of iron** in the intestine and **vitamin D**, which supports normal bone development. In other words, **iron supplements during pregnancy** not only maintain **normal iron levels** in the **mother**'s and **baby's** bodies, but also provide comprehensive support for the growth and proper physical and cognitive development of the baby.

SiderAL® Folico 30mg is a food supplement containing **Sucrosomial®** Iron also designed for **pregnant women**. The presence of vitamin C, vitamin

D, vitamin B6, vitamin B12 and folic acid (in the active form **Quatrefolic®**) together with **Sucrosomial® Iron** contribute to:

- the reduction of tiredness and fatigue;
- the formation of haemoglobin and thus supporting tissue oxygenation;
- the normal function of the immune system
- normal cognitive function;
- normal energy-yielding metabolism;
- prevent bone loss.

SiderAL® Folico 30mg may be recommended by your gynaecologist from the first trimester of pregnancy. However, you should consult your doctor before using the product and, in any case, before you start using any **iron supplement during pregnancy**. The doctor will recommend the most suitable food supplement according to the specific case.

Iron deficiency and the menstrual cycle: what should you do to overcome physical weakness and fatigue?

Iron is an essential nutrient for the well-being of our body, given that it contributes the formation of haemoglobin (and, consequently, the oxygen transport in the blood), supports the normal function of the immune system and normal cognitive function. Low iron levels can lead to some typical symptoms of **iron deficiency**, including general tiredness, asthenia, headache, pale skin and mucous membranes. One of the physiological causes of **iron deficiency in women of childbearing age is the menstrual cycle with heavy menstruation.**

Iron deficiency and menstruation: is there a connection?

Menstruation, from a physiological point of view, is the loss, through the vagina, of blood from the uterine cavity as a result of the shedding of the surface layer of the mucosa. The **menstrual cycle** lasts around twenty-eight days and runs from the first menstruation to the next. **Menstrual bleeding**, on the other hand, lasts 2 to 7 days (with an average duration of 5 days) and an average of 25-50 ml of blood is lost.

The menstrual cycle is not always regular. There may be a delay in menstruation or a more or less abundant blood flow than normal. The main menstrual disorders are:

- **hypermenorrhoea:** blood loss exceeding 80 ml;
- **hypomenorrhea:** blood loss less than 20 ml;
- **menorrhagia:** excessive and prolonged blood loss compared with a

normal flow;
- **metrorrhagia:** abundant and protracted bleeding between two consecutive menstruations;
- **menometrorrhagia:** abundant loss during menstrual bleeding that continues in the period between two consecutive menstruations;
- **amenorrhoea:** indicates the absence of the menstrual cycle.

Even in the days before to menstruation, there may be disorders. About a quarter of women experience moderate to severe premenstrual symptoms. The most common symptoms are: headache, migraine, abdominal pain, backache, breast and leg pain. **Painful menstruation (dysmenorrhoea**) affects approximately 80% of women of childbearing age and approximately one-third of them experience severe disorders, which affect their **daily life**.

Iron deficiency and heavy menstruation

When bleeding is abundant or prolonged, **iron deficiency** may occur.

Iron deficiency is a more frequent condition in women suffering from hypermenorrhoea, menorrhagia, metrorrhagia and menometrorrhagia. The most common symptoms related to **iron deficiency** are:

- general tiredness and fatigue;
- headache, migraine, irritability;
- pale skin and mucous membranes;
- brittle nails and brittle hair;
- tachycardia;
- shortness of breath and trouble breathing;
- sleep disorders;
- dizziness, vertigo.

When the iron deficiency is mild or with a slow onset, a situation of **asymptomatic iron deficiency** may also occur. In these cases, **blood tests** will highlight a possible deficiency. **Blood tests that may indicate an iron**

deficiency are:

- **serum iron**, which indicates the amount of "circulating iron" bound to transferrin;
- **transferrin**, which assesses the iron carrying capacity;
- **ferritin level**, which assesses the iron stored in the body.

What should you do to overcome iron deficiency due to menstruation?

A varied and balanced diet, both from a qualitative and quantitative point of view, can address the amount of iron lost through menstruation. An inadequate and, above all, a diet low in **foods containing iron**, on the other hand, may lead to deficiencies. If we also add to this intense and prolonged **sports activity**, the risk of the body quickly consuming iron reserves increases. Also, certain conditions that decrease the intestinal **absorption** of nutrients, such as coeliac disease, can lead to the onset of iron deficiency in predisposed people.

When an iron deficiency occurs and the diet is not sufficient to restore normal levels of this essential nutrient, your doctor may recommend an **iron-based dietary supplement.**

SiderAL® Folico 30mg is the food supplement of the **SiderAL®** range designed for women of all ages. The **Sucrosomial®** Iron contained in **SiderAL® Folico 30mg** is useful for ensuring an adequate iron intake in cases of deficiency or increased need for this nutrient. Thanks to the exclusive **Sucrosomial® Technology**, the iron contained in the **SiderAL®** product range passes the stomach environment intact and is absorbed in the intestine avoiding the discomforts commonly associated with oral iron administration (bad taste, gastrointestinal irritation).

Iron deficiency anaemia during pregnancy: let's learn about it to prevent its causes

What should you do in cases of **iron deficiency anaemia during pregnancy**? What are the iron values that need to be kept under control? Let's examine the causes and symptoms of **sideropenic anaemia** (iron deficiency anaemia) **during pregnancy**.

Iron deficiency anaemia during pregnancy: what causes it?

Haemoglobin is a protein present in red blood cells and allows them to transport oxygen (O_2) from the lungs to the tissues and carbon dioxide (CO_2) from peripheral tissues to the lungs. Anaemia occurs when there is a reduction in haemoglobin below normal levels.

The **normal values of haemoglobin (Hb)** in the blood are as follows:

- **Men:** 13.4 - 17.5 g/dL
- **Women:** 12 - 15.5 g/dL
- **Pregnant women:** 11 - 14 g/dL

Given that the synthesis of haemoglobin is regulated by the amount of iron in the blood, a reduction in the amount of haemoglobin can also occur if there is an **iron deficiency** in the body. This type of anaemia is known as **sideropenic anaemia** because it is caused by a **deficiency of iron in the body.**

In addition to **iron deficiency anaemia,** there are **other types of anaemia**, not always related to an iron deficiency in the blood. Some anaemias such

as thalassaemia (e.g., Mediterranean anaemia, Fanconi anaemia or sickle-cell anaemia) have genetic causes, whilst in other cases, anaemias can be caused by autoimmune diseases, tumours or infections (e.g., malaria). From here on, we will deal specifically with **iron deficiency anaemia**.

Causes of iron deficiency in the body

An **iron deficiency can be caused** by:

- Reduced or poor iron intake through **diet**;
- Conditions that reduce the absorption of nutrients (including iron) in the intestine;
- Physiological conditions characterised by increased iron requirements (growth, pregnancy, breastfeeding) or blood loss (menstrual cycle in **women of childbearing age**); Trauma or intestinal pathology leading to bleeding.

In most cases, iron deficiency is a condition that sets in slowly. The body puts in place various mechanisms to overcome sideropenia and to **maintain the normal blood values of iron**. However, when the iron reserves in the body are not sufficient to maintain the balance of this mineral in the body, we can see a progressive reduction of **serum iron** (concentration of circulating iron related to transferrin) and low **ferritin levels**. Another value that is monitored in order to assess the blood iron level (the balance and metabolism of iron in the body) is transferrin, a protein that binds the iron and transports it in the body.

What are the symptoms of iron deficiency anaemia during pregnancy?

Iron deficiency anaemia can occur without relevant clinical symptoms and is detected through blood tests. This happens because it is often a condition that sets in slowly and, until the iron reserves in the body are significantly reduced, the characteristic symptoms do not appear. Pregnancy requires an

increased bodily need for iron and, therefore, it is possible that a previous iron deficiency may become more pronounced during the gestation period and typical **symptoms of iron deficiency anaemia** emerge**:**

- General fatigue (asthenia);
- Pale skin and mucous membranes;
- Headaches and migraines;
- Shortness of breath and difficulty breathing, even at rest;
- Irritability;
- Increased fragility of skin, nails and hair;
- Difficulty resting;
- Tachycardia;
- Difficulty concentrating;
- Dizziness and vertigo.

Iron deficiency anaemia during pregnancy: what should you do?

During pregnancy, it is particularly important to keep blood levels of iron and haemoglobin under control to prevent the development of sideropenic anaemia.

Low haemoglobin values can lead to fatigue and asthenia. An iron deficiency in the mother, especially in the last trimester of pregnancy, can also be the cause of reduced iron deposits in the unborn child.

In cases of **sideropenia during pregnancy**, the doctor will assess the most suitable approach to bring the iron values in the body back to normal, through a diet with **iron-rich foods** and eventually a **specific food supplements**.

Iron deficiency: what are the most common symptoms in women?

Iron is an essential nutrient for the well-being of women of all ages. In Italy, approximately 7.1 % of women suffer from iron deficiency for diet-related reasons. In this article, we will find out what the **symptoms of iron deficiency in women** are.

Iron deficiency: symptoms in women

Before we talk about the **symptoms of iron deficiency** in women, it is important to look into the role of iron at all ages.

Iron is considered an essential nutrient for the body as **it plays an important role in numerous physiological processes.** Iron specifically contributes to:

- the formation of haemoglobin and myoglobin, two globular proteins that enable the oxygen transport in the blood and muscles, respectively;
- the production of cytochromes (enzymes that play a role in the metabolism of nutrients and drugs);
- normal cognitive function;
- normal psychophysical development in childhood and adolescence;
- the normal function of the immune system.

The main **causes of iron deficiency in women** are:

1. **Menstrual cycle with heavy menstrual bleeding;**
2. **Pregnancy;**
3. **Breastfeeding;**
4. **Poor dietthat does not provide an adequate amount of iron;**
5. **Conditions in the intestine that reduce iron absorption.**

A **mild iron deficiency is often asymptomatic** and can only be diagnosed by a physician after the prescription of **blood tests** to evaluate the **blood iron levels**, i.e., the balance and metabolism of iron in the body.

When there is a **major iron deficiency**, however, some of the following symptoms may occur:

- General fatigue and tiredness (asthenia);
- Headaches, migraine and irritability;
- Difficulty breathing (shortness of breath, even at rest);
- Sleep disorders;
- Tachycardia;
- Increased fragility of skin, nails and hair;
- Pale complexion of skin and mucous membranes.

In case **iron deficiency** develops rapidly (e.g., in the case of trauma with significant blood loss, gastrointestinal bleeding caused by ulcers or infections), the following symptoms may be added to the typical symptoms listed above:

- Confusional state;
- Extreme thirst;
- Feeling faint.

In any case, a doctor will investigate the causes of iron deficiency and propose the most suitable approach to **restore normal levels of iron in the blood.**

The importance of iron in women of all ages

An increased need for iron occurs mainly during **pregnancy** and whilst **breastfeeding**. During the gestation phase, the iron requirement can rise to 30 mg per day, compared with 14 mg per day needed during the childbearing age. In general, in the pre-conception diet and in the very first weeks of pregnancy, gynaecologists recommend a diet with iron-rich foods to support the iron resources already present in the mother's body. During the third trimester of pregnancy, the foetus also begins to accumulate its **iron deposits** to prepare for the first months after birth, when the only source of iron will be breast milk (or formula milk).

Adolescents and women of child-bearing age may also need **a higher iron intake** to make up for the **iron** lost during the menstrual cycle (especially in the case of **heavy menstruation**). In **menopausal women**, iron can be important to prevent a decrease in the deposits due to possible micro-bleeding that may occur with increasing age and/or the use of specific medications.

Iron deficiency in women: what to do about it

Under normal health conditions, a **varied and balanced diet** guarantees an adequate daily intake of all the nutrients essential for the well-being of our body. However, some specific physiological conditions may require an increased need for certain nutrients.
When diet alone is not enough to make up for iron deficiency or the increased bodily need for this nutrient, a **dietary supplement** may be helpful.
The **SiderAL®** range of **dietary supplements** is designed to ensure an adequate iron intake in cases of deficiency or increased need for this nutrient. **Sucrosomial®Iron** contained in **SiderAL®** food supplements resists the gastric environment and is absorbed in the intestine without causing the most common discomforts associated with oral iron administration (bad

Supplements are not intended as a substitute for a varied, balanced diet and a healthy lifestyle.

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