

Package leaflet: Information for the user

Monofer® 100 mg/ml solution for injection/infusion

Iron

▼ This medicine is subject to additional monitoring. This will allow quick identification of new safety information. You can help by reporting any side effects you may get. See the end of section 4 for how to report side effects.

Read all of this leaflet carefully before you start using this medicine because it contains important information for you.

- Keep this leaflet. You may need to read it again.
- If you have any further questions, ask your doctor or nurse.
- If you get any side effects, talk to your doctor or nurse. This includes any possible side effects not listed in this leaflet. See section 4.

What is in this leaflet

1. What Monofer is and what it is used for
2. What you need to know before you receive Monofer
3. How to use Monofer
4. Possible side effects
5. How to store Monofer
6. Contents of the pack and other information

1. What Monofer is and what it is used for

Monofer contains a combination of iron and isomaltoside 1000 (a chain of sugar molecules). The type of iron in Monofer is the same as that found naturally in the body called 'ferritin'. This means that you can have Monofer by injection in high doses.

Monofer is used for low levels of iron (sometimes called 'iron deficiency' and 'iron deficiency anaemia') if:

- Oral iron does not work or you cannot tolerate it
- Your doctor decides you need iron very quickly to build up your iron stores

2. What you need to know before you receive Monofer

You must not receive Monofer:

- if you are allergic (hypersensitive) to the product or any of the other ingredients of this medicine (listed in section 6).
- if you have experienced serious allergic (hypersensitive) reactions to other injectable iron preparations.
- if you have anaemia **not** caused by iron deficiency
- if you have too much iron (overload) or a problem in the way your body uses iron
- if you have liver problems such as 'cirrhosis'

Warnings and precautions

Talk to your doctor or nurse before receiving Monofer:

- if you have a history of medicine allergy
- if you have systemic lupus erythematosus
- if you have rheumatoid arthritis
- if you have severe asthma, eczema or other allergies
- if you have an ongoing bacterial infection in your blood
- if you have reduced liver function

Incorrect administration of Monofer may cause leakage of the product at the injection site, which may lead to irritation of the skin and potentially long lasting brown discolouration at the site of injection. The administration must be stopped immediately when this occurs.

You should tell your doctor or nurse immediately so that they can stop the infusion if necessary, if you experience symptoms of angioedema, such as

- Swollen face, tongue or pharynx
- Difficulty to swallow
- Hives and difficulties to breath

Children and adolescents

Monofer is for adults only. Children and adolescents should not have this medicine.

Other medicines and Monofer

Tell your doctor if you are using, have recently used or might use any other medicines.

Monofer given together with oral iron preparations can reduce the absorption of oral iron.

Pregnancy and breast-feeding

Monofer has not been tested in pregnant women. It is important to tell your doctor if you are pregnant, think you may be pregnant, or are planning to have a baby. If you become pregnant during treatment, you must ask your doctor for advice. Your doctor will decide whether or not you should be given this medicine.

If you are breast-feeding, ask your doctor for advice before you are given Monofer. It is unlikely that Monofer represents a risk to the nursing child.

Driving and using machines

Ask your doctor if you can drive or operate machines after having Monofer.

3. How to use Monofer

Your doctor or nurse will administer Monofer by injection or infusion into your vein; Monofer will be administered in a structure where immunoallergic events can receive appropriate and prompt treatment.

You will be observed for at least 30 minutes by your doctor or nurse after each administration.

4. Possible side effects

Like all medicines, Monofer can cause side effects, although not everybody gets them.

Common (may affect up to 1 in 10 people):

- Nausea
- Skin reactions at or near injection site including redness of the skin, swelling, burning, pain, bruising, discolouration, leakage to the tissue around the site of infusion, irritation

Uncommon (may affect up to 1 in 100 people):

- Hypersensitivity reactions with potential shortness of breath and bronchospasm
- Headache
- Numbness
- Distortion of the sense of taste
- Blurred vision
- Loss of consciousness
- Dizziness
- Fatigue
- Increased heart rate

- Low or high blood pressure
- Chest pain, back pain, pain in your muscles or joints, muscle spasms
- Stomach pain, vomiting, impaired digestion, constipation, diarrhoea
- Itching, hives, rash, skin inflammation
- Flushing, sweating, fever, feeling cold, shivering
- Low level of phosphate in the blood
- Infection
- Liver enzymes increased
- Local inflammation of a vein

Rare (may affect up to 1 in 1,000 people):

- Severe allergic reaction
- Arrhythmia
- Angioedema
- Hoarseness
- Seizure
- Tremor
- Altered mental status
- Malaise

Flu-like illness (may affect up to 1 in 1,000 people) may occur a few hours to several days after injection and is typically characterised by symptoms such as high temperature, and aches and pains in the muscles and joints.

Reporting of side effects

If you get any side effects, talk to your doctor or nurse. This includes any possible side effects not listed in this leaflet. You can also report side effects directly via [the national reporting system listed in Appendix V](#). By reporting side effects you can help provide more information on the safety of this medicine.

5. How to store Monofer

Keep this medicine out of the sight and reach of children.

Do not use Monofer after the expiry date which is stated on the ampoule or vial label. EXP is the abbreviation used for expiry date. The expiry date refers to the last day of that month.

This medicinal product does not require any special storage conditions. Hospital staff will make sure that the product is stored and disposed of correctly.

6. Contents of the pack and other information

What Monofer contains

- The active substance in Monofer is an Iron(III) isomaltoside 1000. One millilitre of solution contains 100 mg iron as iron(III) isomaltoside 1000.
A 1 ml vial/ampoule contains 100 mg iron as iron(III) isomaltoside 1000, a 2 ml vial/ampoule contains 200 mg iron as iron(III) isomaltoside 1000, a 5 ml vial/ampoule contains 500 mg iron as iron(III) isomaltoside 1000 and a 10 ml vial/ampoule contains 1,000 mg iron as iron(III) isomaltoside 1000.
- The other ingredients are Water for injections, Sodium hydroxide (pH adjuster) and Hydrochloric acid (pH adjuster).

What Monofer looks like and contents of the pack

Monofer is a dark brown solution contained in glass ampoule or in glass vial with chlorobutyle rubber stopper and aluminium cap.

The pack sizes are the following:

Ampoule pack sizes: 5 x 1 ml, 10 x 1 ml, 5 x 2 ml, 10 x 2 ml, 2 x 5 ml, 5 x 5 ml, 2 x 10 ml, 5 x 10 ml

Vial pack sizes: 1 x 1 ml, 5 x 1 ml, 10 x 1 ml, 5 x 2 ml, 10 x 2 ml, 1 x 5 ml, 2 x 5 ml, 5 x 5 ml, 1 x 10 ml, 2 x 10 ml, 5 x 10 ml

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This medicinal product is authorised in the Member States of the EEA under the following names:

Austria:	Monofer
Bulgaria:	Monofer
Denmark:	Monofer
Croatia:	Monofer
Czech Republic:	Monover
Estonia:	Monofer
Finland:	Monofer
Germany:	Monofer
Greece:	Monofer
Ireland:	Monover
Iceland:	Monofer
Italy:	Monoferric
Latvia:	Monofer
Lithuania:	Monofer
Luxemburg:	Monover
Netherlands:	Monofer
Norway:	Monofer
Poland:	Monover
Portugal:	Monofar
Romania:	Monofer
Slovenia:	Monofer
Spain:	Monoferro
Sweden:	Monofer
United Kingdom:	Monofer

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The following information is intended for medical or healthcare professionals only:

Calculation of the cumulative iron need:

Iron replacement in patients with iron deficiency:

The dose of Monofer is expressed in mg of elemental iron. The iron need and the administration schedule for Monofer must be individually established for each patient. The optimal haemoglobin target level and iron stores may vary in different patient groups and between patients. Please refer to official guidelines.

Iron deficiency anaemia will not appear until essentially all iron stores have been depleted. Iron therapy should therefore replenish both haemoglobin iron and iron stores.

After the current iron deficit has been corrected, patients may require continued therapy with Monofer to maintain target levels of haemoglobin and acceptable limits of other iron parameters.

The cumulative iron need can be determined using either the Ganzoni formula (1) or the Table below (2). It is recommended to use the Ganzoni formula in patients who are likely to require individually adjusted dosing such as patients with anorexia nervosa, cachexia, obesity, pregnancy or anaemia due to bleeding.

Haemoglobin is abbreviated Hb.

1. Ganzoni formula:

$$\text{Iron need [mg iron]} = \text{Body weight [kg]} \times (\text{Target Hb [g/dl]} - \text{Actual Hb [g/dl]}) \times 2.4^{(C)} + \text{Iron for iron stores}^{(D)}$$

- (A) It is recommended to use the patient's ideal body weight for obese patients or pre-pregnancy weight for pregnant women. Ideal body weight may be calculated in a number of ways e.g. by calculating weight at BMI 25 i.e. ideal body weight = 25 * (height in m)²
- (B) To convert Hb [mM] to Hb [g/dl] you should multiply Hb [mM] by factor 1.61145
- (C) Factor 2.4 = 0.0034 x 0.07 x 10,000
0.0034: Iron content of haemoglobin is 0.34%
0.07: Blood volume 70 ml/kg of body weight ≈ 7% of body weight
10,000: The conversion factor 1 g/dl = 10,000 mg/l
- (D) For a person with a body weight above 35 kg, the iron stores are 500 mg or above. Iron stores of 500 mg are at the lower limit normal for small women. Some guidelines suggest using 10-15 mg iron /kg body weight.
- (E) Default Hb target is 15 g/dl in the Ganzoni formula. In special cases such as pregnancy consider using a lower haemoglobin target.

2. Simplified Table:

Iron need

Hb (g/dL)	Patients with bodyweight 50 kg to <70 kg	Patients with body weight ≥70 kg
≥10	1000 mg	1500 mg
<10	1500 mg	2000 mg

The treatment effect should be monitored by blood tests. To reach the target Hb-level, the cumulative iron dose may need adjustment.

Iron replacement for blood loss:

Iron therapy in patients with blood loss should supply an amount of iron equivalent to the amount of iron represented in the blood loss.

- If the Hb level is reduced: Use the Ganzoni formula considering that the depot iron does not need to be restored:

$$\text{Iron need [mg iron]} = \text{Body weight [kg]} \times (\text{Target Hb} - \text{Actual Hb}) \times 2.4 \text{ [g/dl]}$$

- If the volume of blood lost is known: The administration of 200 mg Monofer results in an increase of haemoglobin which is equivalent to 1 unit blood:

$$\text{Iron to be replaced [mg iron]} = \text{Number of units blood lost} \times 200.$$

Administration:

Monitor carefully patients for signs and symptoms of hypersensitivity reactions during and following each administration of Monofer.

Monofer should only be administered when staff trained to evaluate and manage anaphylactic reactions is immediately available, in an environment where full resuscitation facilities can be assured. The patient should be observed for adverse effects for at least 30 minutes following each Monofer injection.

Each IV iron administration is associated with a risk of a hypersensitivity reaction. Thus, to minimise risk the number of single IV iron administrations should be kept to a minimum.

Children and adolescents:

Monofer is not recommended for use in children and adolescents < 18 years due to insufficient data on safety and efficacy.

Adults and the elderly:

Monofer can be administered either as an intravenous bolus injection, as an intravenous drip infusion or as a direct injection into the venous limb of the dialyser.

Monofer should not be administered concomitantly with oral iron preparations, since the absorption of oral iron might be decreased.

Intravenous bolus injection:

Monofer may be administered as an intravenous bolus injection up to 500 mg up to three times a week at an administration rate of up to 250 mg iron/minute. It may be administered undiluted or diluted in maximum 20 ml sterile 0.9% sodium chloride.

Intravenous drip infusion:

The cumulative iron dose required may be administered in a single Monofer infusion up to 20 mg iron/kg body weight or as weekly infusions until the cumulative iron dose has been administered.

If the cumulative iron dose exceeds 20 mg iron/kg body weight, the dose must be split in two administrations with an interval of at least one week. It is recommended whenever possible to give 20 mg iron/kg body weight in the first administration. Dependent on clinical judgement the second administration could await follow-up laboratory tests.

Doses up to 1000 mg must be administered over more than 15 minutes.

Doses exceeding 1000 mg must be administered over 30 minutes or more.

Monofer should be added to maximum 500 ml sterile 0.9% sodium chloride.

Injection into dialyser:

Monofer may be administered during a haemodialysis session directly into the venous limb of the dialyser under the same procedures as outlined for intravenous bolus injection.

Please refer to the SPC for further information on Monofer.