

## PATIENT INFORMATION SHEET FOR INTRAVENOUS (IV) IRON THERAPY

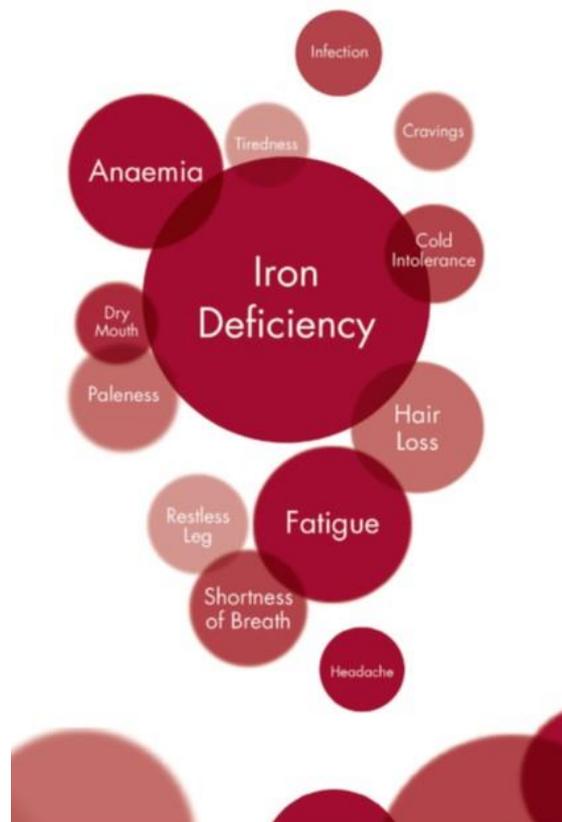
Please read this leaflet carefully. This is a Patient Information Sheet that is a summary / FAQ on information about intravenous (IV) iron therapy.

### What does Iron do in the body?

Iron is an essential nutrient that provides oxygen and energy to the body.

- Iron is an important part of haemoglobin (Hb), the red pigment which gives blood its colour. Haemoglobin is the substance that carries oxygen around your body.
- Iron is also a key component of enzymes that manufacture energy in the muscles.

Lack of iron has many symptoms including fatigue, tiredness and exhaustion. Also trouble sleeping, poor thought processing / unable to think clearly / mind fog, also anxiety. Iron Deficiency can be confused with symptoms of depression. Other symptoms include restless legs, poor hair and in severe cases, a desire to eat ice/paper/soil.





## The Iron Clinic

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### What's the normal amount of iron in the body?

Iron is predominantly held in the red blood cells and muscles of the body. At any one time you have about 3000 - 4000mg of iron in your body. In the normal situation this iron is well maintained; as red blood cells get old they are broken down by the spleen and the iron recycled. A small amount of iron is lost (from the skin and sweat), about 2-3mg a day, and this is replenished from the diet to 'top up' the iron stores, so you normally have plenty of iron in reserves

### What are the causes of Iron Deficiency?

The main cause is nutritional deficiency, lack of iron in the diet. Meat is the main source so vegetarians need to be careful, but other iron rich food include; cereals, soya, and pulses such as lentils. You absorb about 2-8mg of iron a day in your diet. An acid environment in the stomach is needed, so if on antacids this will reduce absorption also drinking tea within an hour of eating, whereas vitamin C helps absorb iron. Simple changes to diet may help.

In women, the commonest cause of iron deficiency is blood loss due to periods. 'Normal' menstrual loss should not be underestimated as this can be up to 40mg of iron every month. Heavy menstrual bleeding (HMB) is surprisingly common, affecting a 20-25% of women at some point in their life; passage of clots, need for double protection, having to get up at night, or accidents. This can be a real problem as the extra blood loss can be over 80ml per cycle and this adds up – to one litre of blood over a year and 500mg of iron!

Pregnancy is a common cause for iron deficiency as the baby needs a lot of iron from their mother (about 1400mg), this can be exacerbated by blood loss at child birth (A Caesarean section loses about 500ml of blood or 250mg of iron).

Other causes of iron deficiency can include; coeliac disease (an intolerance to gluten that reduces absorption of nutrients from the gut), inflammation seen in arthritis or chronic disease, or in patients who have illness from other conditions such as arthritis or diabetes. Surgery is a cause following blood loss or following weight loss (Bariatric) surgery as the part of the gut that absorbs iron is bypassed.



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### To be iron deficient how low on iron am I?

Your body normally has considerable reserve stores of iron (3000 - 4000mg in total). If iron deficiency you are probably functioning on 30-50% of your iron stores, so you will be deficient by about 1000mg - 2000mg. To put this in perspective, your body has several years of iron in reserve. Reduced absorption or increased loss causes iron deficiency slowly over time, so sudden changes or symptoms are not noticed.

#### THE MATHS: -

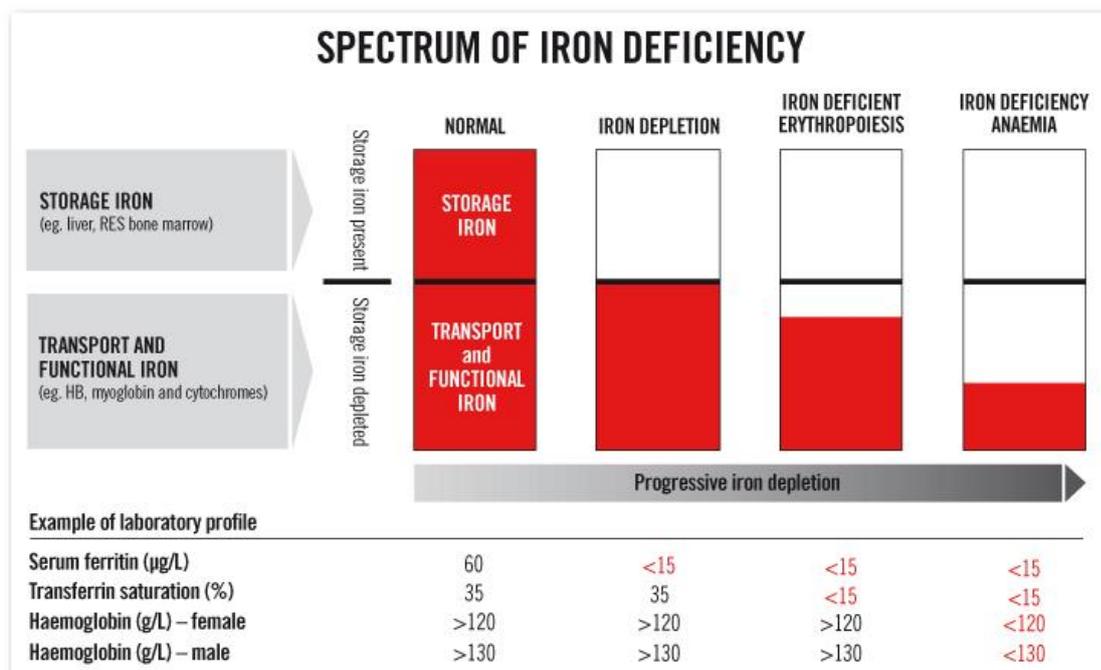
Normal Iron Stores = +4000mg

#### Over one year:

Normal Absorption	=	+2000mg	
Normal losses	=		-1000mg
Losses from normal periods	=		-250mg
Losses from Heavy periods	=		-500mg
Pregnancy	=		-1400mg
Blood loss (1litre)	=		-500mg

Iron deficiency affects 1 in 10 women and so common, its hiding in plain sight, so people tolerate the situation for some time. In a large European survey most women experienced symptoms of iron deficiency an average of 7-8 years before seeking help.

Iron Deficiency happens before you become anaemic. To become anaemic, the body is so low on iron it cannot perform the most vital function, to make red blood cells. So by the time you have iron deficiency anaemia the body is empty of iron.



Modified with permission from Sarah Cusick PhD, Centers for Disease Control and Prevention, 2008.

transfusion.com.au



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### Why can I not just take Iron tablets.

Changes in nutrition (increasing red meat, pulses and soya in your diet) and supplementation with iron tablets is effective for many people; particularly those with mild iron deficiency and few symptoms.

With iron tablets, although the dosage is 200mg three times a day, iron is actually very poorly absorbed and only about 4-10mg of iron is absorbed into the body from the gut. Do the math – if you are 1000mg behind you need a lot of supplements to return to 'normal'. It can take many weeks to stabilise iron deficiency with tablets and a month or more to see any improvement.

Most patients need 4-6 weeks to see their anaemia improve and would need to be on iron supplements for 3-9 months, to fully replenish normal iron stores.

Unfortunately, iron tablets can make people feel sick, develop abdominal pain and constipation. Overall about a third of people stop taking the tablets due to side effects.

### Why do I need an Iron Injection?

In the last five years' new preparations of iron were developed. These enable an individual to receive a 'total dose' infusion safely in 15 to 30 minutes. This means we can safely and effectively give you all the iron needed to replenish normal iron stores in one visit. An iron infusion is a considerably faster and more effective method to correct anaemia than iron tablets.

Typically, your doctor will prescribe 1000mg to 1600mg of iron to be given. So this is a 'total dose' infusion which will correct all your body's iron stores rapidly in one visit. Also, as the iron is delivered directly to the blood so supplying the muscles and bone marrow, where it is needed.

People feel better in a matter of days and as the treatment is a total dose, you may not need any further treatment or tablets.

Oral Iron Takes Time to Correct Iron Levels ...

**≥1500 mg**  
of iron is often needed to  
correct iron deficiency<sup>7</sup>



VS



A standard dose of  
**200 mg/day**

of iron from oral iron  
sulfate tablets leads to **absorption of only  
20 mg/day**

so requiring 75 days to restore iron  
levels in a best case scenario<sup>7B</sup>

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### **What are the likely benefits of Iron injections?**

The infusion is a rapid and effective means to correct iron deficiency. Within days you may notice that you are less tired, have more energy, better concentration and become less breathless.

Anaemia will be corrected in most people within 10 days to 20 days.

### **What should I do in preparation for an Iron injection?**

There is nothing specific that you need to do. Please ensure you are well hydrated and have eaten a light meal before coming.

Please stop taking your iron tablets (If you are currently on those tablets) the day before coming to your appointment.

Please read this information sheet and also have a look on the website for any further information. If you have any questions, then please bring these with you (write them down if you wish) and the team will answer these for you.

### **How Long till I feel better?**

Many report feeling better within a week. Particularly, symptoms of leg cramps, headache, cravings. Fatigue and tiredness improves with the iron correction. Anaemia within 2-3 weeks.

### **How will the Iron be administered?**

When you come in the team will see you to go through your indication and need for the infusion. You will have your Pulse and Blood Pressure taken then a small needle will be placed in a vein in your hand or arm, this is a cannula that the infusion will go through.

The iron is given as a slow injection / infusion / drip over 15-30 minutes.

The iron is a black liquid and given in a bag of saline, so a total volume of 100ml (1/10<sup>th</sup> of a litre). This is set up as a 'drip' and the rate of the infusion is controlled by a pump.

During the procedure you will be asked how you are and observations repeated (Pulse and Blood Pressure).

### **What happens after the procedure?**

Once the infusion has stopped we check you are well, repeat your observations then remove the cannula. After 30 minutes you will be allowed to go home.

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### **Are there any risks?**

Overall this is a safe procedure. We encourage people not to be nervous as this should be no more concern than an injection of antibiotics.

There are some common side effects that about 3-4 people in a 100. The most common is a metallic taste in your mouth, this normally disappears within 15 minutes of you having the injection.

You might feel a flushed or light headed, queasy or dizzy. If you have these symptoms, please tell the person giving the injection. These are normally self-limiting the nurse may stop the infusion for several minutes and restart it more slowly over 30 minutes.

Other side effects that are rarer following treatment of iron include lowering of blood pressure, tingling, or numbness of the limbs, abdominal discomfort, muscular aches and pains, fever, rashes, skin flushing. Rarely, swelling of the hands and feet and very rarely, anaphylactic like reactions (e.g. paleness, swollen lips, itchiness, weakness, sweating, dizziness, feeling of tightness in the chest, chest pain, fast pulse, difficulty in breathing). These may be an allergic reaction to the iron and you will be given antihistamine medication (hayfever tablet) or sometimes a steroid injection.

If you look on the internet the older preparations of iron were made with iron dextran. This older preparation was associated with complications. We do not use these types of iron. The new preparations are far safer and so now in routine use in the NHS and worldwide with over 14 million administrations. In Australia over 30,000 infusions of intravenous iron are given every month.

In clinical trials (of over 8000 patients) that compared people who receive intravenous iron with placebo (an infusion of saline) there was no difference in the number of events reported between the iron and placebo groups.

Overall about 3% of people who receive intravenous iron do feel some side effects the vast majority of which are mild and self-limiting. The major risk is calculated at less than 10 people in a million. In a recent detailed review (JAMA 2016) it was suggested that the risk of the new types of IV iron was similar to those receiving penicillin and overall about one third the risk of receiving a blood transfusion.

### **Are there any situations I should not have an iron Injection?**

You are known to be sensitive (allergic) to any iron preparations intended for intramuscular or intravenous administration.

You are feeling unwell or have any acute or chronic active infections.

You are known to have significant damage to your liver.

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### How long will I need to have the infusions?

The total dose infusion is one injection only. The aim is to restore your body's iron stores to normal in one visit. Unless you have ongoing blood loss issues, or another medical illness it is unlikely you will need further infusions. Some people (20%) do require a second infusion after 2-3 months and this is often in people who are initially very iron deficient to start with or who have ongoing losses.

### How do I know about follow up

We recommend you repeat your blood tests 2months after the infusion, this can be done at The Iron Clinic or with your normal doctor the target results are: -

Haemoglobin (Hb)	> 120g/l	target > 130
Ferritin	> 30 mcg/L (minimum)	target 50-100
Transferrin Saturation (T.Sats)	> 20% (minimum)	target 30% - 40%

### HAIR LOSS

In those people who have had significant problems with their hair with increased hair loss (shedding) or poor hair quality then the recommendation is to keep your iron levels high (Ferritin > 80) for two years to allow full hair restoration. In this latter case then a repeat infusion may be needed to achieve such levels.

### Who can I contact with queries or concerns?

[www.theironclinic.co.uk](http://www.theironclinic.co.uk)

<https://www.facebook.com/theironclinic/> useful and informed blogs about iron

<https://www.facebook.com/groups/782812378530009/> patient help forum.