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### **INFORMATION ON IRON PILLS**

#### **What is oral iron supplementation?**

- Oral iron supplementation refers to the use of iron pills or iron containing liquids by mouth for the purpose of increasing one's iron stores.
- There are a variety of iron tablets, and liquids available that can help increase ferritin levels.
- Iron pills are frequently prescribed for patients with "iron deficiency."

Iron supplements should not be used by individuals without first checking with their physician as it could potentially mask an underlying medical issue which actually needs urgent attention.

#### **What type of iron supplement should I use?**

- Dr. Donovan will advise you on the type of iron supplement he would like you to use.
- Some general principles of taking iron are shown on page 2

#### **What are some of the side effects of iron supplements?**

- Nausea (rarely vomiting)
- Constipation
- Diarrhea
- Black stools
- Darker stools

## **GENERAL PRINCIPLES OF TAKING IRON PILLS**

Iron supplements are commonly prescribed for individuals with low iron stores and low hemoglobin levels. I always advise patients to check with their physicians before simply taking a pill. Some causes of iron deficiency are quite serious and need a proper evaluation. Here are some general principles.

### ***1. There is no perfect choice.***

I'm okay with my patients taking most supplements provided they are not having side effects and provided it's doing a good job and helping to raise ferritin levels. There are over 100 iron supplements on the market. There is no right or wrong as a starting point for most people. If the supplement helps raise ferritin levels to the desired range and the patient feels good while taking the supplement, then it may in fact be the right choice.

### ***2. Start with the least expensive (if possible).***

Iron supplements range from 5-10 cents per pill to 1.25 to 1.50 per pill. If a patient generally has a good stomach and is not prone to constipation or diarrhea, I recommend to start with the least expensive forms. They often work very well and the patient has the potential to save a lot of money. Any of the formulations listed in the attachment below are reasonable starting points. Ferrous gluconate for example is just pennies per pill.

### ***3. I recommend that patients buy specific (more expensive) formulations if they have gastrointestinal issues or use antacids.***

If my patient frequently experiences an upset stomach, or is prone to constipation from previous iron supplements I recommend they consider PROFERRIN or FERRAMAX. Others may also be acceptable. These pills are particularly helpful if patients use antacids as PROFERRIN and FERRAMAX do not require acid to be absorbed and are therefore acceptable for patients who use antacid medications.

## **GENERAL PRINCIPLES OF TAKING IRON PILLS – CONTINUED**

### ***4. Go slowly!***

Regardless of which pill a patient chooses, I can't overemphasize the important of the following key message: go slowly! Start with one pill every other day for 5 days and then go up to daily for 2 weeks. I may advise patients to go higher than once daily but it depends on the exact pill they are using.

### ***5. Take the iron with a source of vitamin C.***

Vitamin C (ascorbic acid) helps increase iron absorption. Taking iron pills with a glass of orange juice or with an actual vitamin C tablet can help iron absorption. If a patient is using ferrous gluconate, fumarate or sulphate, I advise them to be sure to take their iron supplements 1 hour before a meal or 2 hours after.

### ***6. Avoid milk, calcium, high fiber food and caffeine***

If patients are having difficulties raising their ferritin levels, I may advise them to avoid milk, calcium, high fiber foods and caffeine containing beverages. These can impair iron absorption.

### ***7. If more than 1 pill is recommended, spread them out throughout the day.***

Iron absorption is much better if the dose is spread out throughout the day rather than taken all at once. In addition, this may help to limit gastrointestinal side effects, such as nausea and vomiting.

### ***8. If liquid iron is chosen, be aware that it may stain teeth***

Liquid forms of iron may stain the teeth. If patients are using liquid iron they may wish to combine with fruit juice or tomato juice to limiting staining. Drinking the iron with a straw may also help.

## GENERAL PRINCIPLES OF TAKING IRON PILLS – CONTINUED

### ***9. If necessary, oral lysine supplements at 500 mg twice daily can also help to increase iron absorption.***

Lysine is an amino acid (a building block of protein). Studies have shown that L-lysine can help increase iron absorption. If patients are having difficulty with raising their ferritin levels, I may advise them to include L-lysine in their plan.

### ***10. Follow your ferritin levels.***

One should never ever start iron pills unless they plan to test their levels again at some point in the future. This is important. The precise time point to retest ferritin levels will differ from patient to patient but is never sooner than 3-4 months and never more than 9 months. Testing ferritin levels weekly or monthly is pointless. However, re-testing a few months down the road is a good idea.

### ***11. If one has low hemoglobin and low ferritin, further evaluation and tests might be needed.***

Anyone with low hemoglobin and low ferritin needs to speak to their doctor about a range of tests. They may not be necessary of course, but one needs to consider celiac disease, excessive menstrual bleeding (women), gastrointestinal bleeding, dietary issues, and a range of other illnesses. In my clinic, I generally screen for celiac disease (gluten sensitivity) in all patient's with low hemoglobin and low ferritin. Patients with persistently low levels need a full evaluation by physician.

## **Conclusion**

Taking iron is easy for many individuals but presents its challenges to some people. For some, the ferritin levels simply don't budge upwards despite taking iron. For others, any amount of iron causes gastrointestinal upset. A slow and methodical approach such as that suggested above often helps increase levels.



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### Types of IRON PILLS

NAME OF PILL	Amount of Elemental Iron in each Pill	Weight of Actual Pill	COMMENT
Proferrin (about \$1 per tablet)	11 mg	11 mg	Easily absorbed and does not need acid to be absorbed. Made from bovine source (do not use if allergy to cow product)
Ferramax (about 67 cents per pill)	150 mg	150 mg	Easily absorbed and does not need acid to be absorbed. Capsule made from bovine source (do not use if allergy to cow product). Capsule can be opened and sprinkled on food
Ferrous gluconate (4 cents per pill)	35 mg	300 or 330 mg	Needs stomach acid to get absorbed. Take on empty stomach 1 hr before or 2 hours after eating with vitamin C
Ferrous sulphate (4 cents per pill)	60 mg	300 mg	Needs stomach acid to get absorbed. Take on empty stomach 1 hr before or 2 hours after eating with vitamin C
Ferrous fumarate (Palafer, Eurofer; 19 cents per pill)	100 mg	300 mg	Needs stomach acid to get absorbed. Take on empty stomach 1 hr before or 2 hours after eating with vitamin C

## Article 1: What are normal ferritin levels? What do they mean?

Iron levels are important but low iron should not cause immediate panic

Many females have ferritin levels 20-40 without hair loss. That sentence needs to be repeated over and over. And then repeated again. It's far too simple to say that ferritin levels must be above 40 for healthy hair growth. We often "AIM" for that but it is completely wrong to say that anytime ferritin is less than 40 there is a problem. The correct answer is there may be

If you were to measure iron levels (i.e. the ferritin test) in all women between ages 20-40, you'd find many with ferritin 28, 32, 44. You'd find very few with ferritin levels above 50. You'd find a number with ferritin levels 6, 12, 19.

Misconceptions around iron levels.

I think too often I hear women state that because their iron levels are under 40 (ie let's say 26) they MUST have a diagnosis of telogen effluvium. This is wrong. When I learn that an individual has an iron level of 26, I can only say they have an iron level of 26. They may have normal hair. They may have androgenetic alopecia (female pattern hair loss) and they may have a host of other conditions as well including alopecia areata and telogen effluvium. Low iron levels have been associated with many hair loss conditions.

The level of iron tells me very little.

### **Ferritin levels below 15**

Once the iron levels start going low enough, it is true that there is a high likelihood now that the patient will experience some hair loss as a result of those low iron levels. It's quite unusual for a patient to have normal hair growth with a ferritin of 2. In general, once ferritin levels drop below 15 AND the patient has hair loss concerns, it's no longer a debate as to whether to replace iron. It's a general consensus that supplementing iron is necessary.

## **Key 10 summary points about iron levels and hair loss**

Here's some key 'take home' messages about iron and hair loss

1. Aiming for a ferritin level above 40 is a good idea for anyone with hair loss.
2. Aiming for a ferritin above 70 is not my recommendation and is very hard to achieve and generally has little benefit for the hair.
3. If one's ferritin is between 20-40, it must always be remembered that the ferritin levels may be just fine for that person. I'd still recommend supplementing with iron tablets, but there is not a lot of good evidence
4. Ferritin levels under 15 are usually associated with changes in hair cycling. If ferritin is less than 15, I recommend speaking to one's physician about iron pills
5. If ferritin levels are low and hemoglobin levels are low (something we call an anemia), a full workup by a doctor should be booked.
6. Vitamin C helps iron absorption and taking a vitamin C rich sources with iron pills is often helpful to increase iron.
7. Many females have ferritin levels 20-40 without hair loss. The ferritin level alone does not mean much without taking everything into perspective.
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## Article 2: Checking Iron Levels in Women with Hair Loss

As many of my patients know, iron metabolism is one of my favourite subjects. It also forms one of the components of the hair loss research that I do.

I generally recommend that all women with concerns about hair loss have their iron levels checked using the simple blood tests called ferritin. Other blood tests may also be ordered for women with hair loss, such as thyroid tests and a complete blood test to measure the hemoglobin level.

Although it is somewhat contraversial among hair experts around the world, the iron level I like my patients to aim for is a ferritin level above 40-50 ug/L. If the blood test shows less than this, then I recommend supplementation with iron pills.

### **New research outlines additional benefits of checking iron levels in women**

In a recently published study, Swiss researchers studied 198 premenopausal women who had ferritin levels less than 50 ug/L and symptoms of fatigue. A proportion of women in the study received ferrous sulphate pills and another proportion of women received placebo pills.

#### **What were the results of the study?**

At the end of the 12 week study, women who received iron noted a significant improvement in their overall level of fatigue compared to women receiving the placebo pills. The ferritin level in women receiving the iron pills increased by approximately 12 ug/L over the 12 weeks of the study.



## **Comment**

Many premenopausal women have low iron levels. This study reminds us that there are many important benefits of iron, including helping improve the overall feeling of fatigue (if levels are low). Although I routinely follow iron levels in my patients, this study reminds us that asking about improvement in fatigue levels may also be an important parameter to assess in making a decision about continuing iron supplements for the longer term.

## **Reference**

Vaucher P et al. Effect of iron supplementation on fatigue in nonanemic menstruating women with low ferritin: A randomized controlled trial. CMAJ 2012 Aug 7; 184:1247.

