NUTRITION

pre-fueling

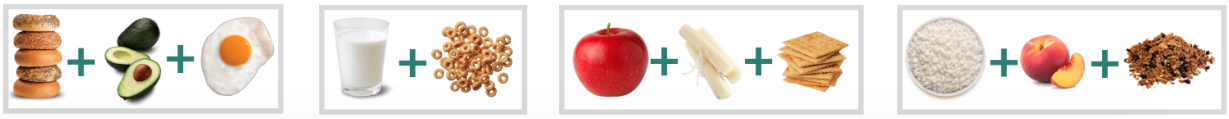
Carbohydrates are your body's preferred source of energy for endurance exercise. In the 4 hours prior to your run, eat mostly carbohydrate-rich foods so you can perform at your best. Eat larger meals 3-4 hours out from your workout and smaller ones 1-2 hours prior to your workout. Drink water or an electrolyte beverage as you feel thirsty, especially if it is hot outside! To avoid an upset stomach, focus only on water within 30 min of a run.

Here are a few ideas of what you could eat before a workout or meet (1-2 hours prior)

Here are a few ideas of what you could eat before a workout or meet (3-4 hours prior)

post-fueling

After your workout, eat a snack with both protein & carbohydrates to accelerate your body's recovery process. After a hard workout, your muscles have small tears in them and need to be repaired in order to become stronger. Protein greatly assists with this process while eating carbohydrates replenishes your energy stores.



More important than getting the perfect snack or meal is just getting any type of fueling within the critical post run window (30-45min after a run).

Recovery snacks should be eaten as soon as possible post run. With your metabolism at its highest it is ideal to get in a protein/carb snack within 30-45min of finishing your run. Additionally a full meal should follow within 2 hours of run. Sip water continuously and choose some salty foods to help your body rehydrate.

general diet

Eating an overall balanced diet will allow you to reach your potential as an athlete. A simple way to do this is to ensure that every meal has 1 color (veggie/fruit), 1 carbohydrate, and 1 protein. Balanced snacks should include at least 2 components.

IRON HEALTH

maintaining iron levels as an endurance athlete

It is important that coaches, parents, and athletes work together to be educated on the topic so that they can make the best decisions in regards to nutrition, vitamins/supplements, diagnosis of iron deficiency, and the recovery process.

Treating iron deficiency is a long process. Starting treatment late in a season will result in little to no benefit. Proactive screening in the offseason or early season is recommended to ensure that athletes have a healthy training experience and perform to the best of their ability.

What is iron? What are the symptoms of iron deficiency?

Iron is a mineral that aids in energy metabolism and oxygen transport.

Red blood cells transport oxygen throughout the body and are filled with proteins called hemoglobin. Each hemoglobin molecule contains iron.

If an individual is not maintaining adequate levels of iron, that deficiency limits oxygen transport resulting in the following symptoms:

- Increased feelings of fatigue/exhaustion throughout the day
- Increased recovery time from training, feeling tired and sore for longer
- Shortness of breath during efforts that were previously comfortable
- Decline in performance within workouts (first half strong, second half weak)
- Significant decrease in race performance

Why are runners more at risk to have iron deficiency?

Athletes need more iron than the general population. Exercise, particularly high intensity and endurance types, increases iron losses by as much as 70% when compared to sedentary populations. Red blood cells also break down more quickly in those who exercise. Athletes need between 17mg-25mg of iron daily to stay in a healthy range which is difficult to achieve unless you are proactive at including iron rich foods into your diet and/or taking a 25mg supplement.

How is iron deficiency diagnosed?

Iron deficiency is diagnosed through blood tests. Two general tests are recommended:

1. Ferritin Test
2. Complete Blood Count (CBC) plus a Ferritin Test

When you get your test results back ask for the exact Ferritin number from your doctor. Just asking if your athlete is within the “normal range” won’t give you the full picture.

Doctors will commonly just interpret Ferritin levels using the average population range:

Adult Male: 12ng - 300ng/mL
Adult Female: 12ng - 150ng/mL

While that range is a starting point for doctors, it needs to be placed into the individual context of the patient, including age and physical activity. Using multiple medical journals as a reference, the suggested minimum for highly active teenagers is:

Males ages 14-18: 35ng/mL
Females ages 14-18: 25ng/mL

Notice the difference between the average range and the individualized minimum. If your athlete has a Ferritin level of 15ng/mL a well-intentioned doctor might simply tell you that your athlete is in "normal range". If you ask for the specific Ferritin number you can place it in the context of their suggested minimum and advocate for action to be taken to treat iron deficiency.

How is iron deficiency treated?

Maintaining iron levels through dietary means is always preferable to taking an iron supplement, however, replenishing iron levels once an iron deficiency is diagnosed usually requires iron supplementation through oral means (pill or liquid).

Diet

There are two kinds of iron: heme and non-heme. Heme iron, found in meat, is most easily absorbed by your body. Red meat is the best source of iron. Regularly incorporate foods with heme and non-heme sources of iron in your diet. Pair non-heme iron with sources of vitamin C to increase absorption.

heme-iron

non-heme iron

vitamin c

Supplementation

Daily/Preventative supplementation ≈ 25mg of iron/day

Standard Iron deficiency supplementation ≈ 65mg of iron/day (taken for 3+ weeks)

Taken when ferritin levels do not reach the minimum described above.
Like all medications and supplements, iron supplementation can have undesirable side effects, commonly an upset stomach or constipation. Taking more than a daily/preventative supplement should only be done with proper testing to evaluate if there is an iron deficiency.