

Fueling the Runner: Bone Health

On the Track and At the Table

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Many have likely heard of the recent events at the Kentucky Derby - the tragic accident of Eight Belles. She tested her body and pushed the limits as any great athlete would. The devastating outcome of multiple fractures in a horse is heart wrenching.

Runners are bona fide competitors. We test our strength, endurance, and will with a vision of superiority. We often focus on the next workout, race, or personal best we can pursue. We train to improve fitness and achieve goals. Unfortunately an injury may occur as the body's way of saying "too much!" It is easy to focus on training specific to a daily workout or race. But as competitors, training is more than just the mileage.

In the case of Eight Belles there are likely multiple reasons for what occurred. But it does bring to mind the issue of injuries, specifically bone health. Stress fractures are a very common injury to runners. Of course every stress fracture is not the result of poor nutrition. The word "stress" in stress fracture holds a lot of meaning to the injury. But nutrition does play a big role. A lack of nutrition can place added stress on your body. The stress in needing to withstand training is enough, why add poor nutrition to the mix?

Calcium consumption takes the forefront as a major component in bone health. The human skeleton acts as a storage system of calcium. If enough calcium is not consumed in the diet, the body will pull from bone calcium stores to fulfill its metabolic purpose. Unfortunately that can leave your body in a negative state of calcium balance in which bone loss can occur. Bone is constantly being broken down and rebuilt. When a negative state of calcium balance is prolonged and bone is not effectively rebuilt, the risk of a stress fracture is heightened.

Maintaining calcium balance is important to promoting good bone health. This is done by consuming enough calcium in the diet. Various stages of life require differing amounts of calcium. For example the typical middle or high school age runner needs about 1300 mg of calcium/day. This is the age when peak bone mass occurs. Consuming enough calcium during this time can potentially prevent future problems. Adults need about 1000 mg/day and older adults need slightly more at about 1200 mg/day.

Achieving adequate calcium in the diet is commonly associated with a minimum of 3 dairy servings a day. As a general food preference, many find the old fashioned glass of milk a challenge to incorporate in the diet. Effort should be made not to overlook milk as a fantastic calcium source and a wonderful addition to your daily menu.

In thinking through your day, where can you add calcium to your diet? Include a yogurt with your fruit or cereal at

breakfast. Eat an ounce of cheese on a sandwich or added to a salad at lunch. And enjoy an 8 oz glass of milk or ½ c. cottage cheese for dinner. There are other non-dairy food sources of calcium that can be potential substitutes to common dairy sources. This includes soy milk or yogurt, green leafy vegetables and tofu, as well as some fortified breads, pasta, juice, cereals and sports bars.

In the female runner, having normal menses is another major factor in maintaining good bone health. The term amenorrhea is coined to females lacking menstruation. Amenorrhoeic runners have a lower bone mass than those with normal menstrual function. This occurs because females who lack a menstrual cycle have a reduced amount of the hormones that play an important role in bone remodeling and density. This creates an increased risk of fracture because of the body's inability to repair even a slight damage to the bone. When the damage accumulates over time a stress fracture can result.

Runners who are amenorrhoeic need to pay particular attention to calcium and total calories. An amenorrhoeic runner may need up to an extra 400 mg of calcium per day. This means a high school girl lacking a menstrual cycle should aim for about 1700 mg/ day. This is equivalent to almost 6 - 8oz glasses of milk! Each 8 oz glass provides about 300mg.

Having caloric energy balance is also very important in maintaining normal menstrual function. The goal is to eat the same amount of calories burned in a day. Even more specifically, it is important to get enough energy in the form of carbohydrates and fat. If enough "energy" is not consumed reproductive processes stop because the body needs to use the energy for other metabolic purposes. Preventing this may require eating even when you aren't hungry to meet the high caloric demands that can be associated with running. Restricting calories can lead to a lower calcium intake, a caloric energy deficit, and potentially poor bone health.

Imagine what awareness in the little details such as an extra glass of milk a day can do. Greatness is absolutely achievable with great training. However, training for a true competitor takes place at the dinner table as much as it does on the track.

Jackie Dikos was born and raised in Cincinnati, Ohio, well within the radius of Derby Madness that emanates from Louisville at this time of the year. She currently lives with her husband and 2 year old son in Indianapolis, Indiana, also within this circle.

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