

Fit But Broken

There has been a significant increase in fractures in young, active, very fit females. This is an interesting phenomenon. We know that exercise is very important in building strong, healthy bones. So why are fit, exercising ladies breaking down?

The answer appears to be related to the body fat levels and the relation of low body fat to the development of hormonal imbalances. There is a common theme amongst many of these women who are getting into trouble. They are exercising on a daily basis, pushing their bodies hard, and most importantly, are not taking in adequate amounts of calories to fuel their bodies. The result is a situation in which important hormone levels can be thrown out of balance. Specifically, as body fat levels drop, so does estrogen, and abnormal menstrual cycles also occur. As a result, bones can weaken and even osteoporosis can develop.

If your bones are weaker, and you continue to pound them with exercise, breakdown will occur. The type of fracture that happens is not the typical fracture that occurs from a sudden injury, fall, or accident. These fractures develop gradually, over time, as small cracks occur in the weakened bone. They are called stress fractures. The earlier phase of a stress fracture, before the bone actually develops microcracks, is called a stress reaction. Instead of dropping a fine china teacup and watching it shatter, these stress fractures are more akin to a paper clip that is bent over and over, gradually weakening, until it snaps. Stress fractures are a dynamic process of bone breaking down and trying to heal at the same time. The treatment typically involves stopping the offending activity and giving your body a chance to heal things. Also, other factors such as training routines and biomechanics must also be evaluated to see why the athlete is getting into trouble. We now realize, especially with young female athletes who have stress fractures, that the nutritional side must also be evaluated and dealt with. This is perhaps the most important factor- one that is not often addressed.

Stress reactions and stress fractures can be difficult to diagnose, especially in their earlier course. Plain x-rays are often normal initially. The key is to have a high index of suspicion based on the patient's history and physical exam. MRI scans are extremely helpful in confirming the diagnosis of both stress reactions and/or stress fracture, even in the very early phases.

There is an entity called the "female athlete triad," which involves disordered eating habits, amenorrhea and osteoporosis. It is becoming more and more prevalent especially as women are getting more and more active, and striving to be extremely lean.

The lesson here is not to give up exercise but to be sure that your exercise routines are balanced and allow for adequate rest and recovery time. Also adequate high-quality calories are essential. If you are already lean and you are burning more calories than you are taking in, you'll probably get in trouble. High-risk athletes include distance runners, gymnasts and dancers. If you participate in one of those activities, or if you are just lean and active, and it had stress fractures, especially recurrent ones, or ones that are slow to heal, you should take a close look at your nutrition, including calcium and vitamin D intake, and even consider seeing a nutritionist. Abnormal menstrual cycles (including absence of menses) should be a strong warning light.

Have you had problems with stress reactions or stress fractures? Do you think nutrition is an issue? Has getting lean and fit gotten you into trouble? Please share your stories and help others possibly avoid this serious problem and unnecessary downtime from the activities they love.

Credit – Nicholas DiNubile, M.D.