The truth about energy drinks
By Aaron Macdonald, ATC

Red Bull, Rockstar, and Full Throttle are just a few of the many energy drinks now on the market. The ads for these drinks promise quick energy and mental acuity. And based on how well they are selling, the public believes those claims.

Many people feel as if they need a “pick-me-up” at different points during the day and believe that the quick burst of energy these drinks provide is a good solution.

The problem with this thinking is that there is no way of knowing what is actually in these drinks. The Food and Drug Administration (FDA) does not regulate what goes into energy drinks or even what the manufacturer says is in the drink. The ingredients are entirely up to the discretion of the manufacturer.

Energy drink manufacturers can claim that their ingredients do amazing things and they are not required to back up these claims with hard science. Many drinks say they include “herbal” or “all natural” ingredients that help energize the mind and body. However, the energy that these drinks provide comes solely from caffeine and sugar. A can of caffeinated soda has around 23 mg of caffeine, compared to about 80 mg in most energy drinks. That’s enough caffeine in one drink to provide 1.5 times the daily amount recommended by the FDA.

Although most of the drinks do provide some quick energy, what people do not realize is that there are many possible side effects, including upset stomach, leg weakness, heart palpitations, nervousness and shaking. These symptoms can be magnified when an energy drink is consumed on an empty stomach.

Energy drinks are often advertised as preworkout/competition drinks. Many manufacturers even sponsor sporting events to get their names out to their target audience. What the manufacturers fail to mention is the body’s negative reaction to massive caffeine intake prior to physical exertion. Consuming energy drinks can cause overstimulation of both the nervous and cardiovascular systems, which is dangerous prior to exercise.

Rather than relying on these drinks for a boost, proper nutrition and sleep are better ways to get the energy to make it through the day.
A growth plate, also known as an epiphyseal plate, is the area of growing tissue near each end of the long bones in children and adolescents. A growth plate determines the future length and shape of the mature bone. When growth is complete — sometime during adolescence — the growth plate closes and is replaced by solid bone. Because the growth plates are the weakest areas of the growing skeleton, they are vulnerable to fractures.

In a child, serious injury to a joint is more likely to damage a growth plate than the ligaments that stabilize the joint. Trauma that would cause a sprain in an adult might cause a growth plate fracture in a child. Growth plate fractures occur twice as often in boys as in girls. Girls’ bodies mature at an earlier age than boys, and their bones finish growing sooner. This means their growth plates are replaced by stronger, solid bone earlier.

One-third of all growth plate injuries occur in competitive sports such as football, basketball or gymnastics, while about 20 percent of growth plate fractures occur as a result of recreational activities such as biking, sledding, skiing or skateboarding. Fractures can result from a single traumatic event, such as a fall, or from chronic stress and overuse. Most growth plate fractures occur in the long bones of the fingers (phalanges) and the outer bone of the forearm (radius). They are also common in the lower bones of the leg (the tibia and fibula).

While growth plate injuries can be caused by a specific event or injury, they can also result from overuse. For example, a gymnast who practices for hours on the uneven bars, a runner training for long distances or a baseball pitcher perfecting his curveball can all have growth plate injuries.

An athlete may need to see a doctor if he or she is unable to continue playing because of pain following an acute or sudden injury, decreased ability to play over the long term because of persistent pain following a previous injury, or severe pain from acute injuries.

Since the 1960s, the Salter-Harris classification, which divides most growth plate fractures into five categories based on the type of damage, has been the standard. The categories are as follows:

**Type I - Fracture through the growth plate:** The epiphysis is completely separated from the end of the bone or the metaphysis, through the deep layer of the growth plate. The growth plate remains attached to the epiphysis. The doctor has to put the fracture back into place if it is significantly displaced. Type I injuries generally require a cast to protect the plate as it heals. Unless there is damage to the blood supply to the growth plate, it is likely that the bone will grow normally.

**Type II - Fracture through the growth plate and metaphysis:** This is the most common type of growth plate fracture. It runs through the growth plate and the metaphysis, but the epiphysis is not involved in the injury. Like Type I fractures, Type II fractures may need to be put back into place and immobilized. However, the growth plate fracture heals a great deal, especially in younger children. If it is not too displaced, the doctor may not need to put it back into position. In this case, it will strengthen with time.
Growth plate injuries
By Carrie McCloskey, ATC

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Type III - Fracture through growth plate and epiphysis: This fracture occurs rarely and usually happens at the lower end of the tibia, one of the long bones of the lower leg. It happens when a fracture runs completely through the epiphysis and separates part of the epiphysis and growth plate from the metaphysis. Surgery is sometimes necessary to restore the joint surface to normal. The outlook or prognosis for growth is good if the blood supply to the separated portion of the epiphysis is still intact and if the joint surface heals in a normal position.

Type IV - Fracture through growth plate, metaphysis and epiphysis: This fracture runs through the epiphysis, across the growth plate, and into the metaphysis. Surgery is often needed to restore the joint surface to normal and to align the growth plate. Unless perfect alignment is achieved and maintained during healing, prognosis for growth is poor, and angulation (bending) of the bone may occur. This injury occurs commonly at the end of the humerus (the upper arm bone) near the elbow.

Type V - Compression fracture through growth plate: This uncommon injury occurs when the end of the bone is crushed and the growth plate is compressed. It is most likely to occur at the knee or ankle. Prognosis is poor, since premature stunting of growth is almost inevitable. Treatment for growth plate injuries depends on the type of injury. In all cases, treatment should be started as soon as possible after injury and will generally involve a mix of immobilization, physical therapy or even surgery. Longterm follow-up may also be necessary.

About 85 percent of growth plate fractures heal without any lasting effect. The most frequent complication of a growth plate fracture is premature arrest of bone growth. The affected bone grows less than it would have without the injury, and the resulting limb could be shorter than the opposite, uninjured limb. If only part of the growth plate is injured, growth may be lopsided and the limb may become crooked.
Nominate your Comeback Athlete of the Month

UK Sports Medicine is a proud sponsor of the Scholastic Ball Report, a high school sports show that airs every Saturday morning on WKYT. Once a month on the show, we will recognize an athlete who has worked incredibly hard to come back to his or her sport from a challenging injury. This award is sponsored by DonJoy and will be presented at the end of the month to this special athlete.

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