By Kim Schoenhals

DISCOVER THE MENTAL AND PHYSICAL BENEFITS OF TAURINE AND WHY IT CAN BE A SHORT-TERM SOLUTION TO YOUR EVENT-FILLED DAY

leave your slump behind
You've seen the commercial. A sketched man finds himself in a predicament where he needs a boost of energy. He pulls out a can, starts drinking, sprouts wings and flies away. The can is full of Red Bull, a popular energy drink that contains a number of ingredients, including 1,000 mg of taurine and 80 mg of caffeine. While caffeine is synonymous with pick-me-up, taurine remains a bit enigmatic.

Strictly speaking, taurine is a "conditionally essential" amino acid—meaning that it is only essential in certain situations, such as infant brain development. It is created during the body's metabolism of two other amino acids, cysteine and methionine. Taurine isn't utilized for protein synthesis; rather, it's stored in skeletal muscle while it waits to be used in the many other bodily functions that occur on a cellular level. These functions include helping the body to improve heart health, to detoxify and to ward off diabetes, epilepsy and cystic fibrosis. But for the most part, taurine is touted for improving endurance and energy, particularly as an ingredient in energy drinks.

While the body manufactures taurine, intense exercise may deplete it, according to a Belgian study of marathon runners printed in a 2001 issue of Amino Acids. Subsequent animal research done at the University of Florida at Gainesville, reported in a 2002 issue of the same journal, indicates that taurine supplements can increase stored levels of the amino acid, as well as improve performance.

"Taurine cannot be directly converted by the muscle into useful energy," says John Dominy, co-author of the 2002 study and currently at Cornell University in Ithaca, New York. "Taurine, however, appears to be very important in muscle...it helps muscle maintain its normal physiological state even under conditions of stress such as prolonged exercise."

In addition to enhancing physical performance, taurine may enhance mental performance and mood, particularly when consumed in energy drinks. A preliminary study of 10 graduate students reported in a 2000 issue of Amino Acids found that Red Bull helped maintain mental reaction times, sociability and vitality into the wee hours of the night.

While supplementation appears to have beneficial effects on mental and physical performance, long-term supplementation may not be prudent. According to Dominy, recent research has shown long-term supplementation with high doses of taurine—2-3 grams per day—may actually decrease the body's ability to absorb dietary taurine, which comes from animal protein. This amount is the equivalent of 2-3 cans daily of Red Bull.

"There are transporters on cells that take up taurine from our diet," Dominy explains. Research found that when you put an animal on a high-taurine diet for a long period, those cell transporters begin to shut down. In essence, your body has a threshold for the amount of taurine it can absorb. Short-term supplementation may be beneficial, however. A study of 11 young men featured in the March 2004 issue of...
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