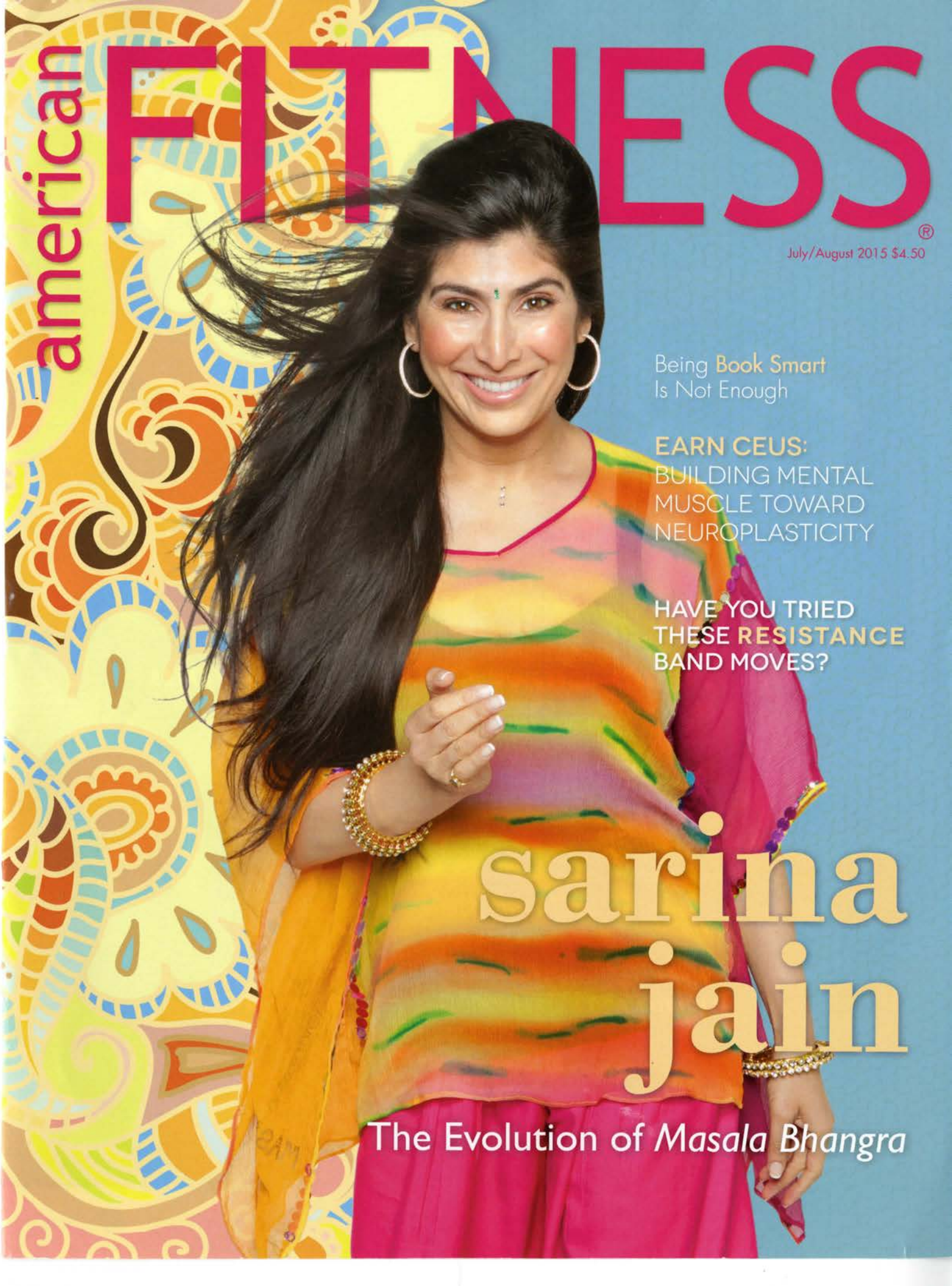
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AF Q&A

BY MATT BRZYCKI

DOES BEETROOT JUICE IMPROVE AEROBIC PERFORMANCE?

In the never-ending quest to improve physical performance, experiments are performed with all sorts of products. One of the latest is beetroot juice.

The thinking is that beetroot juice may improve performance by increasing the bioavailability of nitric oxide, a molecule that has numerous functions in the body. For one thing, nitric oxide—not to be confused with nitrous oxide or "laughing gas"—signals the body to dilate blood vessels thereby increasing blood flow. This, of course, could be an advantage in aerobic-type activities.

Canadian researchers randomly assigned eight men (average age 23.8) to receive either concentrated beetroot juice or a placebo 1.5 hours prior to a submaximal run on a treadmill (to simulate a typical warm-up) and subsequent 1,500-meter run on an indoor track. Over the next six days, the subjects—all elite runners—consumed beetroot juice or the placebo with lunch. Then, they again did a submaximal run and 1,500-meter run. After a washout period of at least seven days, the subjects repeated the same eight-day protocol, this time consuming the other beverage.

There were no significant differences in running economy during the submaximal run on the treadmill. And there were no significant differences in the time that it took the subjects to complete the 1,500-meter run.

CAN RESISTANCE TRAINING MEET THE WEEKLY CRITERIA FOR AEROBIC PHYSICAL ACTIVITY?

The World Health Organization recommends that adults do aerobic activity for at least 150 minutes of moderate intensity or 75 minutes of vigorous intensity per week in bouts of 10 minutes or more, along with at least two sessions (days) of resistance training. Given the growing body of research that shows improvements in health can be derived from brief, intense exertion, resistance training might be used as an alternate aerobic activity.

As part of a larger study, 16 subjects (average age 28.0) wore a heart-rate monitor during a resistance training program. The subjects did three sets of four exercises for 12, 10 and 8 repetitions with 80% of their one-repetition maximum while taking 90 to 120 seconds of recovery between sets.

Their workouts lasted 37.5 minutes with 51.5% of the time training at moderate to vigorous levels of exertion. So resistance training has the potential to elevate the heart rate enough to count toward weekly activity goals.

IS BEER A GOOD REHYDRATION BEVERAGE?

Water works well in replacing fluids that are lost during exercise. However, a rehydration beverage should also provide electrolytes—most notably, sodium and potassium—as well as some carbohydrates.

A number of beverages are designed specifically to rehydrate the body. Other beverages are thought to be equally or more effective, including beer.

In one study, 11 men (average age 24.4) exercised in a climatic chamber (89° and 55% humidity) by pedaling a stationary cycle until they lost about 2% of their body mass. This was done on three separate days (one week apart). After each bout, the subjects were randomly assigned to be rehydrated with an equal volume of a different fluid, either bottled water, regular beer (4.6% alcohol) or low-alcohol beer (0.5% alcohol).

Regular beer produced the lowest amount of fluid retention and the greatest amount of urine output. In addition, it impaired motor performance (reaction time and balance). In short, regular beer isn't a good choice as a rehydration beverage.

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