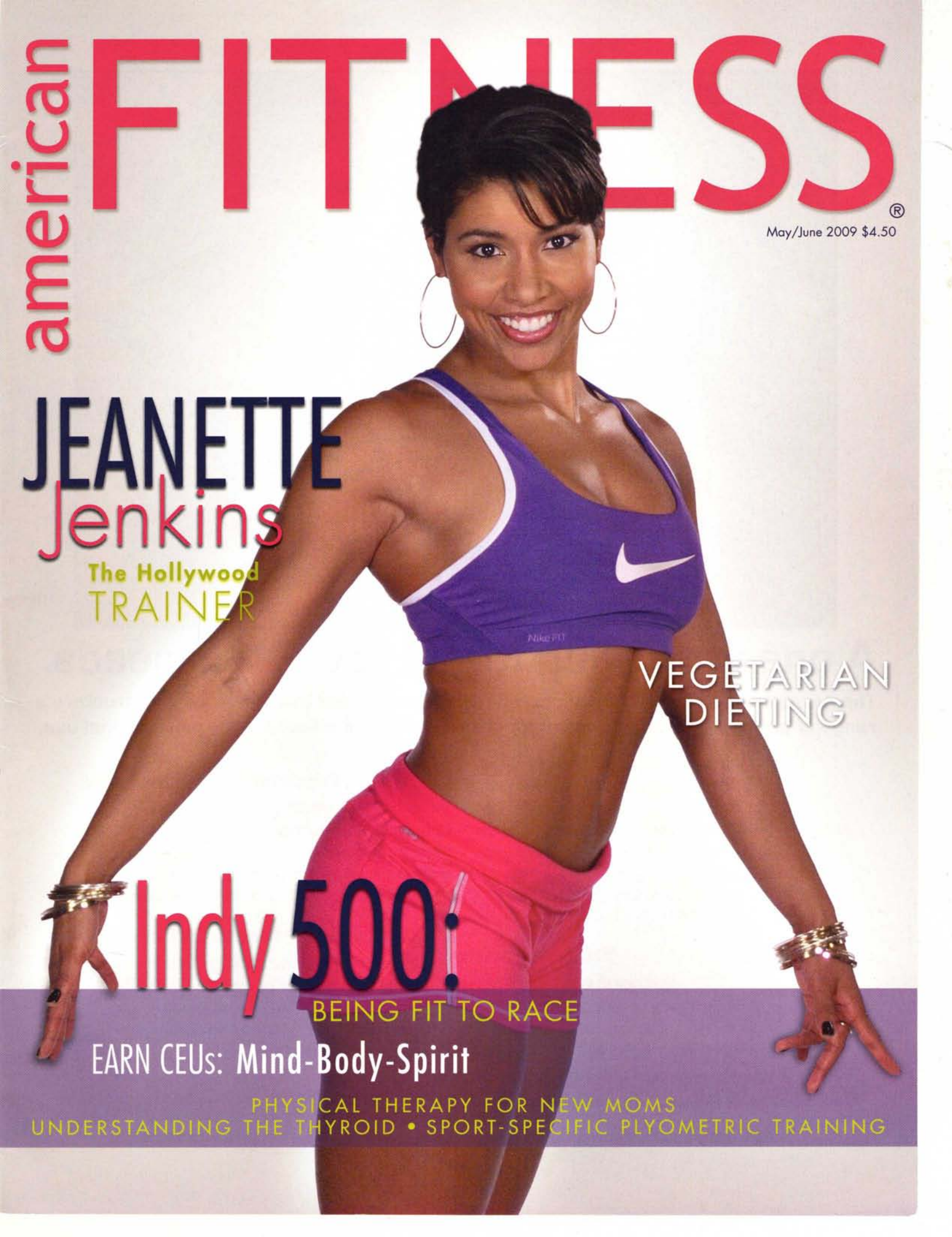
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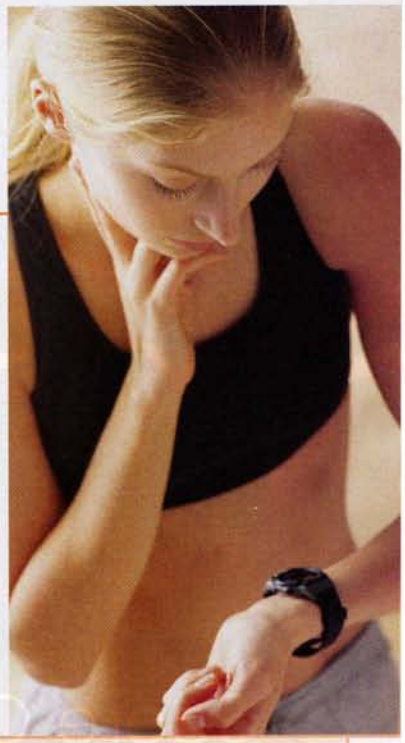

Is there any significance as to how quickly the heart rate recovers after exercise?

Few would argue about the importance of the resting heart rate and exercising heart rate with respect to fitness. But what about the recovery heart rate following exercise?

Recovery heart rate is a fairly good indicator of a person's fitness level. Indeed, those who can recover more quickly from exercise are most likely in better shape. Even more significant, several studies have found that recovery heart rate is an indicator of longevity.

In one of those studies, researchers at the Cleveland Clinic Foundation followed 2,428 patients (average age 57 at baseline) for six years. Using the Bruce Protocol, recovery heart rates were taken during a cool-down period one minute after completion of graded exercise on a treadmill. In this study, an abnormal recovery heart rate was considered to be a reduction of 12 beats per minute or less; a normal recovery heart rate was a reduction of 13 beats per minute or more.

Of the 639 patients who had an abnormal recovery heart rate, there were 120 deaths from all causes (18.8 percent); of the 1,789 patients who had a normal recovery heart rate, there were 93 deaths from all causes (5.2 percent). The study found that having a heart rate that takes a long time to return to resting levels following exercise is "a powerful predictor of overall mortality."

Should individuals inhale or exhale when raising a weight?

It's clear that exercisers should breathe properly while strength training, especially during maximal efforts. But should they breathe in when raising a weight and breathe out when lowering it or do the opposite?

It doesn't seem to matter too much whether exercisers inhale or exhale as the weight is raised. As it turns out, inhaling and exhaling naturally usually results in correct breathing. This is fortunate since it may be difficult for some individuals to maintain a set pattern of breathing when lifting weights.

One thing that must be avoided while strength training, however, is holding breath. When the breath is held during exertion, it creates an elevated pressure in the abdominal and thoracic cavities, which is referred to as the "Valsalva maneuver." The elevated pressure interferes with the return of blood to the heart. This may deprive the brain of blood and can trigger loss of consciousness.

Bottom line: Exercisers should just breathe naturally.

Does conjugated linoleic acid have any effect on body composition?

In studies of animals, conjugated linoleic acid (CLA) has been shown to reduce fat mass and increase lean body mass. But studies of humans have found mixed results. Some have shown that CLA reduces fat mass and/or increases lean body mass while others have shown no effect. Many of the studies that found positive effects had small numbers of subjects and were of short duration, which makes it difficult to draw any meaningful conclusions.

In one long-term study, 180 obese subjects were randomly assigned to three groups: Two groups received different types of CLA and another group received a placebo. In comparison to the placebo group, the groups that were given CLA significantly decreased fat mass and increased lean body mass. One CLA group lost 3.74 pounds of fat and gained 1.54 pounds of lean body mass; the other lost 5.28 pounds of fat and gained 1.32 pounds of lean body mass. So the results weren't exactly breathtaking, especially considering that this was after taking CLA for 12 months.

Also worth mentioning is that all three groups reduced their caloric intake over the course of the study. By the 12th month of the study, the CLA groups were consuming at least 105 calories per day less than the placebo group. This, of course, could easily account for much of the difference in the results. **AF**

Matt Brzycki is the Assistant Director of Campus Recreation and Fitness at Princeton University. He has more than 25 years of experience at the collegiate level and has authored, co-authored and edited 17 books.

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