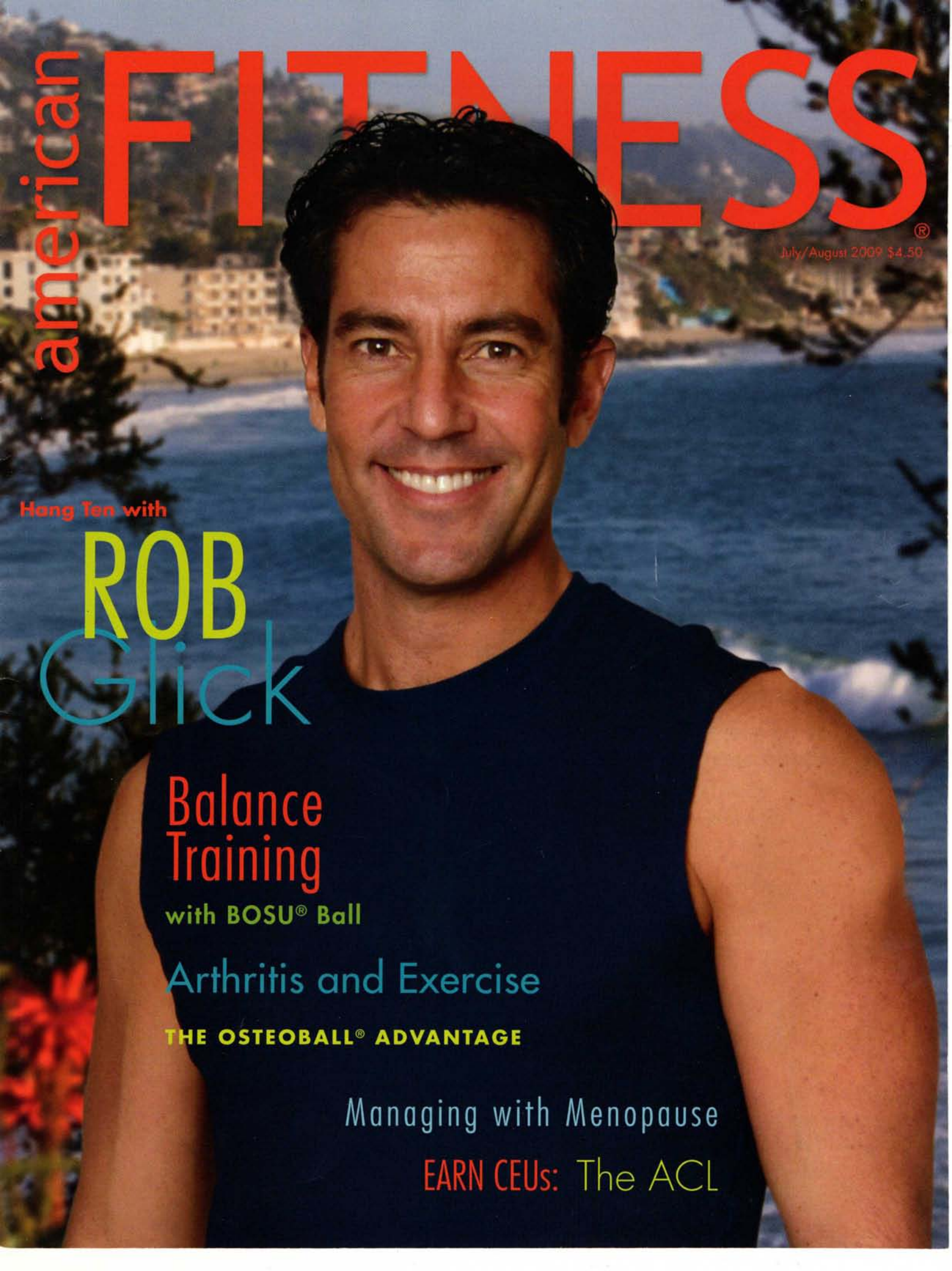
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AF Q & A

BY MATT BRZYCKI

DO PEOPLE NEED TO EAT ACCORDING TO THEIR BODY TYPE?

Among the many theories for losing weight is that eating should be based on body type. One book asserts that there are four different body types that are named after four major glands in the body, but this hasn't gained any acceptance by the scientific and academic communities. In a 1940 book that he co-authored, Dr. William Sheldon advanced the idea that there are three main body types: endomorph, mesomorph and ectomorph. These are the classifications most widely used in science and academia.

Endomorphs have a soft and round physique. They have a very high percentage of body fat without much muscle tone. Mesomorphs have a heavily muscled physique. They have an athletic build with broad shoulders, a large chest and a trim waist. Ectomorphs have long limbs and a slender physique. They have a very low percentage of body fat without much muscular size.

So, what do these body types have to do with food choices? Not much, really. There aren't any special foods that an endomorph needs to consume, for example. Sure, a likely goal of an endomorph is to decrease body fat but that simply means eating fewer calories (while engaging in aerobic and strength training).

Bottom line: Regardless of body type, the intake of foods should contain appropriate percentages of carbohydrates, protein and fat along with adequate amounts of vitamins and minerals.

DOES STRETCHING PRIOR TO A PHYSICAL ACTIVITY IMPROVE PERFORMANCE?

A frequent question, particularly from exercise beginners, is whether or not stretching should be done before an activity. Most studies have shown that stretching prior to doing an activity can hinder a muscle's ability to produce maximum force, at least temporarily. To date, in fact, *no study* has shown that pre-activity stretching improves performance.

In one study, 13 moderately active subjects (average age 24) were randomly exposed to three different conditions of passive stretching (durations of two, four and eight minutes) and a control condition. Passive stretching of the plantar flexors was performed on a dynamometer for 30 seconds then released for 20 seconds. This stretch-release sequence was repeated until the muscle was stretched for the assigned duration. For example, two minutes of stretching involved four 30-second stretches.

The researchers found that stretching decreased strength by as much as 6 percent. However, this wasn't significantly different from the control (nonstretching) condition. The decreases were dose-dependent in that as the length of the stretching protocol increased, so did the reduction in strength.

Take-home message: Pre-activity stretching doesn't improve performance, but if done for reasonable durations, won't have a significant impact.

WHAT EFFECT DOES MEAL FREQUENCY HAVE ON HUNGER AND SATIETY?

The notion that eating more meals can help with weight management seems contrary to common sense. Indeed, how is it possible to eat more and weigh less? Well, the number of meals should be greater but the size of those meals—in terms of calories—should be smaller. In spreading calories over more meals—rather than cramming calories into fewer meals—individuals are better able to keep their hunger at bay.

In one study, 15 subjects (average age 45) were randomly assigned to eat all of their calories in either a control diet (three meals per day for eight weeks) or an experimental diet (two meals per day for two weeks and one meal per day for six weeks). After an 11-week "washout period," the subjects were switched to the other diet for eight weeks. (Both diets had about the same number of calories: 2,364 calories in the control diet and 2,429 in the experimental diet; the experimental diet was eaten during a four-hour period in the early evening.)

The study showed that those who ate one meal per day had higher ratings of hunger and lower ratings of satiety (fullness) compared to those who ate three meals per day. And as time went on, those ratings became more pronounced.

Matt Brzycki is the Assistant Director of Campus Recreation, 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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