MOTIVATIONAL IDEAS | SPA ATMOSPHERES | WAIVERS & RELEASES

Fitness Management™

ISSUES AND SOLUTIONS FOR FITNESS FACILITIES

MARCH 2004

DESIGN

Make Waves with Your Pool!

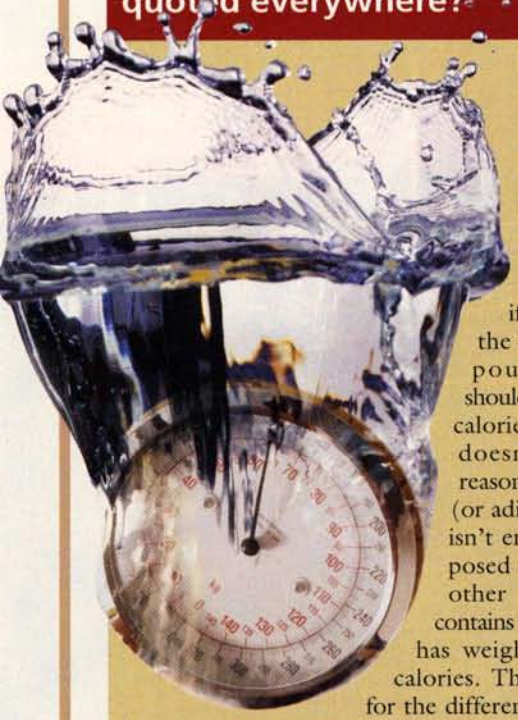
How You Can Help to Fight Childhood Obesity

Facility Design Tips & Techniques

universityQ&A

By Matt Brzycki

If fat has 9 calories per gram, and there are 454 grams in a pound, how can 1 pound of fat have the 3,500 calories that's quoted everywhere?

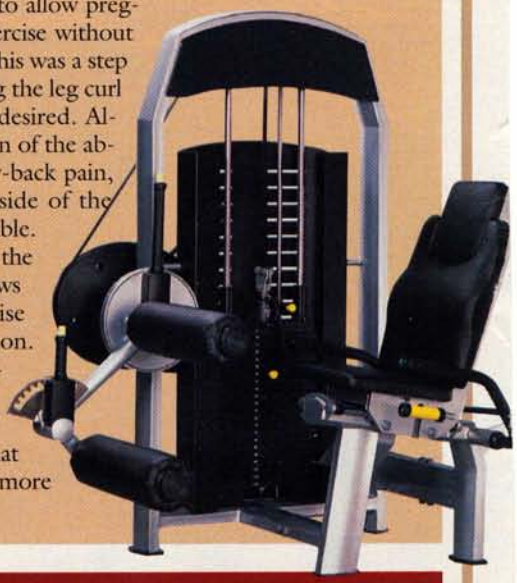


One gram of fat does have 9 calories, and 1 pound does equal 454 grams. So if you crunch the numbers, 1 pound of fat should have 4,086 calories. But why doesn't it? The reason is that fatty (or adipose) tissue isn't entirely composed of fat. Like other tissues, fat contains water, which has weight, but not calories. This accounts for the difference between the estimated calories and the actual calories in 1 pound of fat.

What's the difference between the prone leg curl and the seated leg curl?

Up until the mid-1980s, the only leg curl machine available was one that required the user to perform the exercise in the prone position. While it was productive in targeting the hamstrings, some people were simply unable to perform the prone leg curl in a comfortable manner. Those with too much abdominal mass, for example, found it difficult — if not impossible — to perform the exercise in the prone position, since it resulted in a significant compression of tissue. Furthermore, some individuals experienced low-back pain when performing the prone leg curl.

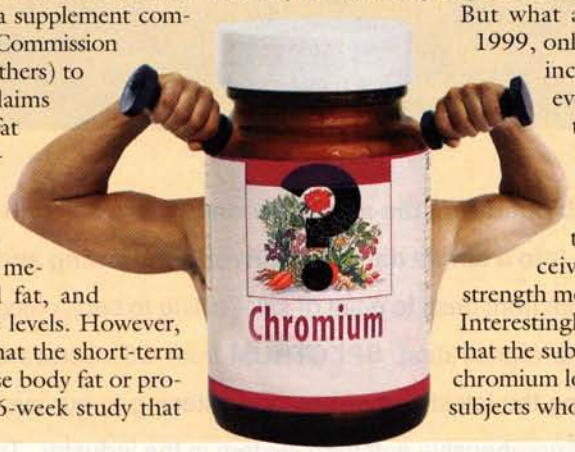
In 1984, a well-known equipment manufacturer produced a side leg curl, in which users performed the exercise by lying on their left side. Interestingly, the side leg curl was developed to allow pregnant women to perform the exercise without abdominal compression. While this was a step in the right direction, performing the leg curl in this position left a bit to be desired. Although it eliminated compression of the abdomen and greatly reduced low-back pain, exercising while lying on one side of the body was somewhat uncomfortable.



Next came the introduction of the seated leg curl. This position allows the user to perform the exercise without abdominal compression. Moreover, the seated leg curl produces less discomfort in the low-back area than the prone leg curl. It's no surprise, then, that the seated leg curl has become more popular than the prone leg curl.

Is it true that chromium decreases body fat and increases muscle mass?

Most of the claims regarding the benefits of chromium are based on two poorly controlled, unpublished studies. These two studies were referenced in a review article that was written by a chemist who was consulting for a supplement company. In 1996, the Federal Trade Commission ordered the company and (two others) to stop making unsubstantiated claims that chromium decreases body fat and increases muscle mass. Nevertheless, misconceptions about chromium still persist.



Chromium is an essential micromineral that functions in the metabolism of carbohydrates and fat, and helps to maintain blood glucose levels. However, numerous studies have shown that the short-term use of chromium doesn't decrease body fat or promote fat loss in any way. In a 16-week study that involved 95 healthy Navy personnel, for example, a group that received chromium didn't significantly reduce body fat more than a group that received a placebo.

But what about its effect on muscle mass? As of 1999, only one study has reported that chromium increases muscle mass. In that study, however, muscle mass was estimated from anthropometric measurements, which can be unreliable.

Incidentally, it appears as if chromium doesn't increase muscular strength, either. In a 12-week study, a group that received a placebo actually increased their strength more than a group that received chromium. Interestingly, the researchers in this study also found that the subjects who received chromium had urinary chromium losses that were nine times greater than the subjects who were given a placebo.

Matt Brzycki is coordinator of recreational fitness and wellness programs at Princeton University, Princeton, N.J. He has more than 20 years of experience at the collegiate level and has authored, co-authored or edited 11 books.

Do you have questions that you need answered? Email them to edit@fitnessmgmt.com.