Special Report: Equipment Update

fitness MANAGEMENT

ISSUES & SOLUTIONS FOR FITNESS FACILITIES

NOVEMBER 2006

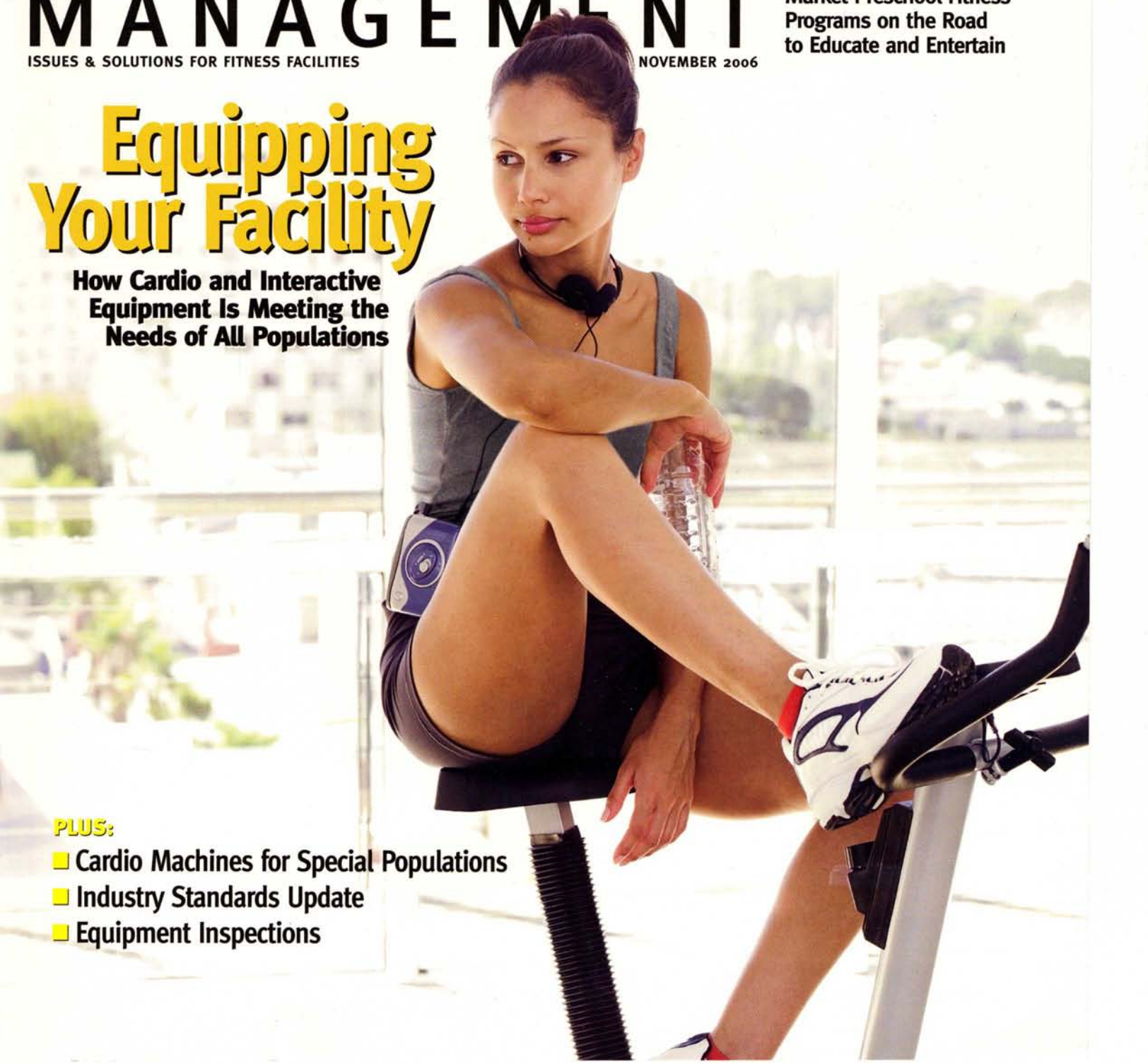
EQUIPMENT
Interactivity Motivates Members via Outdoor and Computerized Simulation

INSURANCE
How to Choose an Insurance Policy to Meet Your Facility's Needs

KIDS FITNESS
Market Preschool Fitness Programs on the Road to Educate and Entertain

Equipping Your Facility

How Cardio and Interactive Equipment Is Meeting the Needs of All Populations



PLUS:

- Cardio Machines for Special Populations
- Industry Standards Update
- Equipment Inspections

Q&A

[BY MATT BRZYCKI]

Does lactic acid hurt performance?

For many years, lactic acid was thought to be the primary suspect in muscular fatigue and, subsequently, the decline in performance. However, a 1989 study started a controversy that gained fresh legs in 2004 when an editorial in *Science* magazine referred to lactic acid as "the latest performance-enhancing drug." And, a recent article in *The New York Times* and a series of debates in the *Journal of Applied Physiology* added fuel to the fire.

Exercise physiologists have taken sides and made compelling arguments for their respective positions. Some scientists claim that conditions other than the accumulation of lactic acid cause muscular fatigue, and point to research that shows that it delays muscular fatigue; other scientists say much of the research cannot be extrapolated to real life, since it examined isolated non-contracting muscle, or "skinned" muscle fibers, from a rat.

So who's right? At this point, it's hard to tell. Clearly, muscular fatigue is caused by a complicated series of events. Future research may offer definitive proof about the precise role of lactic acid in muscular fatigue. But, characterizing lactic acid as a "performance-enhancing drug" seems to be quite a stretch. **FM**

Can a small volume of sprint training improve aerobic fitness?

In one study, eight "recreationally active" subjects (average age 22) completed six sessions of sprint training on a stationary cycle over a period of two weeks. (Three sessions were completed each week on non-consecutive days.) Each session consisted of four to seven Wingate tests (30 seconds of all-out sprinting), with four minutes of recovery between each sprint. In the two-week period, the subjects performed a total of 32 bouts of 30-second sprints (or 16 minutes of sprinting). The longest "workout" involved only 3.5 minutes of effort.

Despite this extremely low volume of training, the results were astonishing. The subjects improved their time to fatigue while cycling at 80 percent of their peak oxygen intake by nearly 100 percent (from 26 minutes to 51 minutes). This includes one subject whose endurance decreased by 16 percent because of an ankle injury (unrelated to the study) on the day prior to the post-test.

Regardless of the remarkable results and obvious implications — namely, being able to achieve an enormous improvement in endurance capacity in a short period of time — efforts of such extreme intensity aren't suitable for everyone. Plus, performing

eight minutes of activity per week — even if it's intense — won't expend an appreciable amount of calories. We'll also have to see if these results can be replicated in future studies. **FM**

Does garlic lower blood pressure?

Garlic (allium sativum) is a popular flavoring agent. In addition, it has been used for thousands of years as a medicinal compound. It's been believed that garlic can treat a wide variety of diseases and disorders. (And, according to folklore, garlic can ward off vampires.) But, can garlic improve blood pressure?

In one of the largest relevant studies to date, 62 healthy subjects (ages 40 to 60) were randomly assigned to receive either a garlic tablet or a placebo. The subjects and researchers were blinded as to the assignments. The placebo tablets were similar to the garlic tablets in appearance and size. (A drawback of this study was that, because of garlic's odor, 77 percent of the subjects in the garlic group thought that they received garlic tablets, while no one in the placebo group thought that they received garlic tablets.) The researchers found that garlic had no effect on blood pressure. In fact, the vast majority of placebo-controlled studies have found that garlic doesn't improve blood pressure more than a placebo.

The most common side-effects of consuming garlic are body odor and "garlic breath." In the aforementioned study, side-effects from the garlic tablets included belching (12 subjects), odor (five subjects) and flatulence (three subjects). No wonder Dracula steers clear of the stuff! **FM**

Matt Brzycki is coordinator of recreational fitness and wellness programs at Princeton University, Princeton, N.J. He has more than 22 years of experience at the collegiate level and has authored, co-authored or edited 14 books.