

Special Report: **Facility Design**

# fitness

## MANAGEMENT

ISSUES & SOLUTIONS FOR FITNESS FACILITIES

JANUARY 2008

### ARCHITECTURAL DESIGN

Transform Small Spaces  
Into Big-Time Solutions

### FLOORING

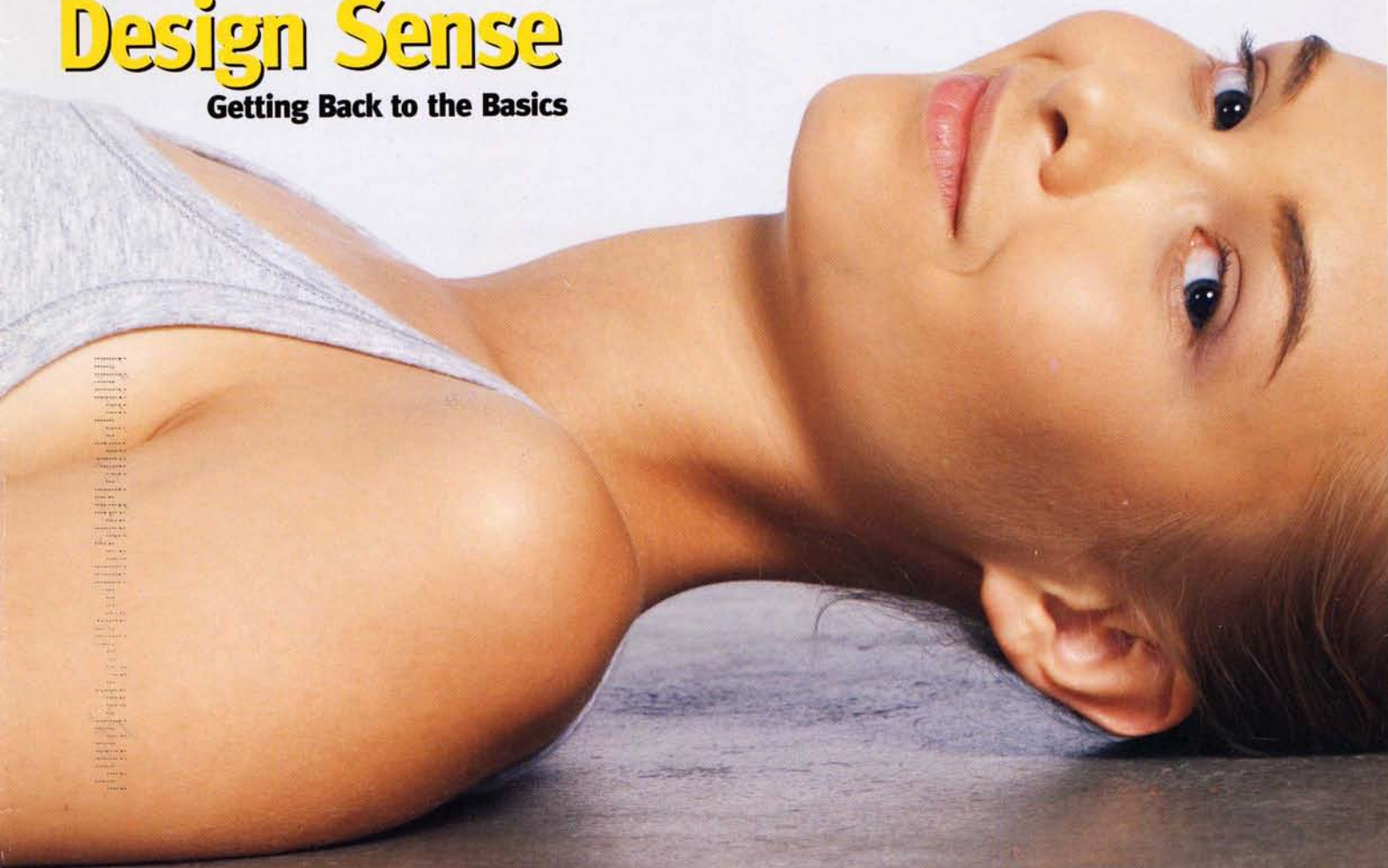
Choosing Functional Floors  
for Your Outdoors

### LOCKER ROOMS

Providing the Essentials  
to Meet Members' Needs

## Design Sense

Getting Back to the Basics



### PLUS:

- Aquatics for the Mind and Body
- Research Update: Cardio Equipment Effectiveness
- Purchasing Guide: Insurance

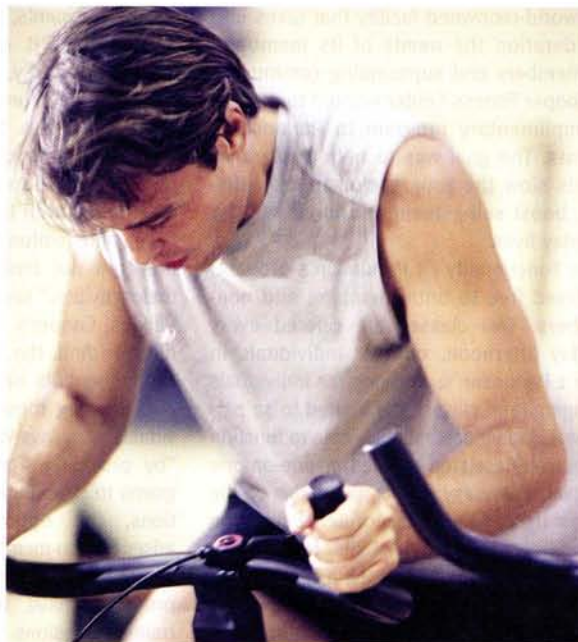
## Does ribose improve performance?

The breakdown of Adenosine Triphosphate (ATP) is the primary — and immediate — source of energy that's used to perform muscular work. Since a limited amount of ATP can be stored, it must be resynthesized (or rebuilt) over and over. In the body, ribose is a sugar that helps to resynthesize ATP. In theory, then, ribose supplements could increase the levels of ATP and improve performance.

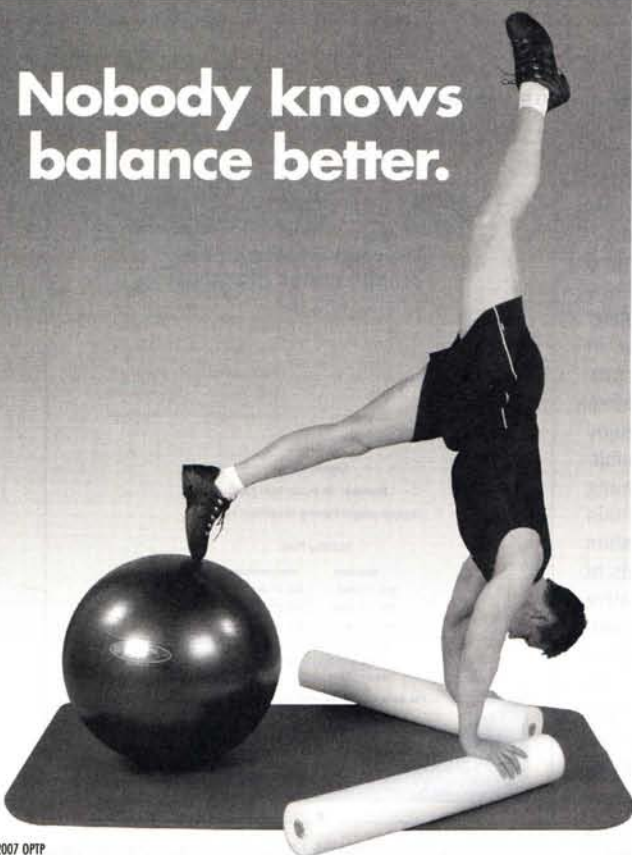
One study involved 11 subjects (cyclists and strength-trained individuals; age not reported) who were randomly assigned to receive either ribose or a placebo (wheat flour) 30 minutes prior to a bout of exercise. Each session consisted of three Wingate tests (30 seconds of all-out sprinting) on a stationary cycle, with two minutes of recovery

between each test. One week later, the subjects switched to the other pill and repeated the same protocol.

There was no significant difference between ribose and the placebo in any measure, including peak power, average power and percent decrease in power. In fact, the majority of research hasn't found any significant enhancement of performance from ribose. **FM**



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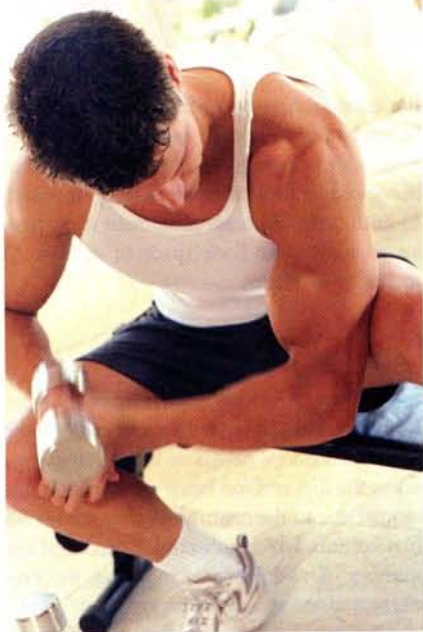
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## Can strength training produce an increase in the number of muscle fibers?

An increase in the number of muscle fibers is known as "hyperplasia." The increase is thought to take place by fiber splitting or "budding." There's some evidence that hyperplasia occurs in several avian and mammalian species — includ-



ing quails, chickens, cats, rats and mice — under certain experimental conditions. But a few researchers have questioned the methods used to assess changes in the number of fibers, and suggested that these findings are the result of misinterpretation.

Regardless of how animal studies are interpreted, there's no definitive proof that hyperplasia occurs in humans who strength train. In one study, 12 men (ages 18 to 25) performed strength-training exercises three times per week for 12 weeks. Each session consisted of eight exercises (four of which were for the elbow flexors), and each exercise was performed for three sets of 10 repetitions to the point of muscular fatigue. The subjects significantly increased the cross-sectional area (and strength) of their biceps. Despite the increase in muscular size, however, there was no change in the estimated number of muscle fibers.

The bottom line is, in humans, an increase in muscular size is probably the result of the addition of contractile protein — namely, actin and myosin — not in the addition of muscle fibers. **FM**

## Does green tea reduce the risk of cardiovascular disease or cancer?

With the exception of water, more people drink tea than any other beverage. For years, it has been thought that green tea offers protection against a wide range of ills. A short list includes cancer, cardiovascular disease, arthritis and high cholesterol.

A recent study investigated the effects of consuming green tea and mortality due to all causes, cardiovascular disease and cancer. Officially referred to as the "Ohsaki National Health Insurance Cohort Study," the researchers looked at 40,530 men and women (ages 40 to 79) living in Northeastern Japan who had no history of stroke, coronary heart disease or cancer.

According to the data, those who consumed at least five cups of green tea per day had a 16-percent lower risk of dying from all causes, and a 26-percent lower risk of dying from cardiovascular disease compared to those who drank less than one cup per day. Interestingly, these associations were mainly found in women. The data showed no



link between green tea and dying from cancer.

One drawback is that this was a cohort study, in which a group of people who have the same characteristics or experiences is followed for a certain period of time. In general, cohort studies aren't as reliable as randomized, controlled studies. The researchers even admit, "Clinical trials are ultimately necessary to confirm the protective effect of green tea on mortality." Another drawback of the study is that it relied on self-reported data from the subjects, which can be inaccurate. **FM**

Matt Brzycki is assistant director of campus recreation, fitness at Princeton University, Princeton, N.J. He has more than 24 years of experience at the collegiate level and has authored, co-authored or edited 16 books.

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