

Special Report: **Architectural Design**

fitness

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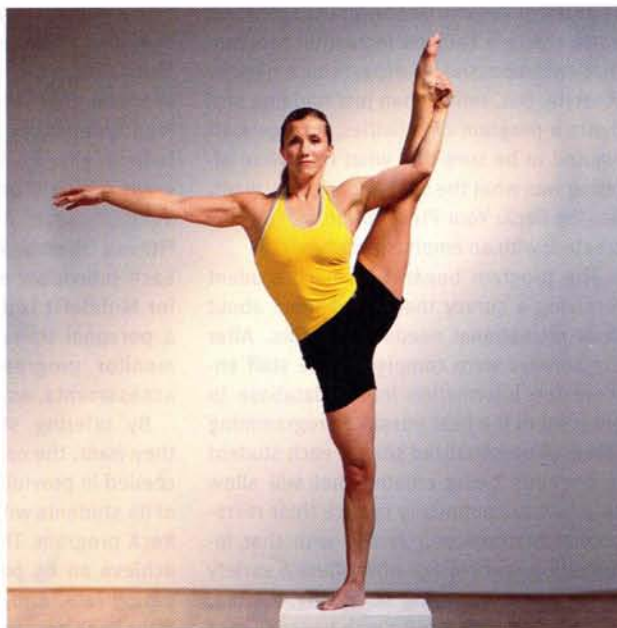
Can balance training enhance balance?

In one study, 39 young male soccer players were randomly assigned to three groups: One group performed balance training immediately before soccer training, another group performed balance training immediately after soccer training and the third group performed no balance training. The balance training was performed for 20 minutes per session, three times per week for 12 weeks.

The two groups that performed balance training improved their balance, while the group that did no balance training didn't improve. However, the researchers assessed balance with the very same activities that were used for balance training. In other words, the subjects who improved at balancing on a balance board likely did so because they practiced the skill of balancing on a balance board for 12 weeks.

Is the balance that's required for one activity related to the balance that's re-

quired for another? In a study that involved 320 subjects, the researcher found that the correlation between two balance tasks was "little more than zero." In another study, researchers looked at six tests of balance and found that the abilities that supported one test of balance were separate from those that supported another. This suggests that improving balance in one activity doesn't transfer to balance in other activities. **FM**



Can everyone perform the same number of reps with a given percentage of max resistance?

Wayne Westcott reported data on 141 subjects who performed an endurance test with 75 percent of their one-repetition maximum (1-RM). It would be expected that 10 repetitions could be performed with this workload, and the subjects completed an average of 10.5 repetitions. But only 16 of the subjects (11.35 percent) performed exactly 10 repetitions. A total of 75 subjects (53.91 percent) performed either less than eight repetitions or more than 13. At the extremes, two subjects only performed five repetitions, and one managed 24.

Researchers at the University of North Dakota also found wide variations in muscular endurance among 98 football players. In this study, four of the athletes had the same 1-RM in the bench press (300 pounds). But when tested with 75 percent of this weight (225 pounds), they performed nine, 10, 11 and 16 repetitions.

Why the wildly different performances? It has long been suspected that muscular endurance is largely dictated by an individual's mixture of fast-twitch (FT) and slow-twitch (ST) fibers. Relative to FT fibers, ST fibers are more resistant to fatigue and, therefore, display greater levels of endurance. As a result, someone who has a high percentage of ST fibers will have a greater potential for muscular endurance than someone who has a high percentage of FT fibers (everything else being equal). **FM**

Does fortified water offer any advantages or benefits?

Fortified (or "enhanced") water contains vitamins, but each bottle costs more than \$1. For less than a dime, you can get pretty much the same

thing by washing down a multi-vitamin/mineral supplement with a glass of water. Also of note is that fortified water usually contains more sugar — and more calories — than might be expected. An 8-ounce serving of one popular "water beverage," for example, has 13 grams of sugar (crystalline fructose). So, someone who drinks a 20-ounce bottle gets 32.5 grams of sugar (130 calories). For those who are trying to maintain/lose weight, these calories only add to their "caloric budget."

Individuals who eat a balanced diet have no need to drink water that's fortified with vitamins. The best way to get vitamins and minerals is by eating fruits, vegetables and other wholesome foods. Many "water beverages" offer an alluring array of other enhancements including amino acids, antioxidants, herbs and minerals, but none of the products live up to their advance billing. The best way to get fluids is to drink plain, old-fashioned water. **FM**

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