CELEBRATING 21 YEARS 1985-2006

Fitness Management®

ISSUES AND SOLUTIONS FOR FITNESS FACILITIES

FEBRUARY 2006

Weight Machines vs. Free Weights

A Guide to Changes in Waiver Law

Technology's Effect on Fitness Center Operations

• TRAINER EXPERTISE • THE GRAVITY EFFECT • CHOOSING NUTRITION SOFTWARE

Q&A

[BY MATT BRZYCKI]

Does taking shark cartilage prevent, treat or cure cancer?

Public curiosity about shark cartilage as an anti-cancer agent dates back to at least the 1970s. Interest arose in 1993 when the eternally popular show 60 Minutes broadcast a segment called "Sharks Don't Get Cancer." The feature highlighted a Cuban study in which 20 percent of the cancer patients (three of 15) had a positive response to shark cartilage. The study later came under severe criticism for design flaws. And, for the record, sharks *do* get cancer.

In a study that was published in the journal *Cancer* in 2005, 83 patients with advanced cancer (breast or colorectal) received standard care along with either shark cartilage or a placebo that looked and smelled identical to the shark cartilage. There was no difference between the shark cartilage and the placebo in terms of improving the overall survival or quality of life of the cancer patients.

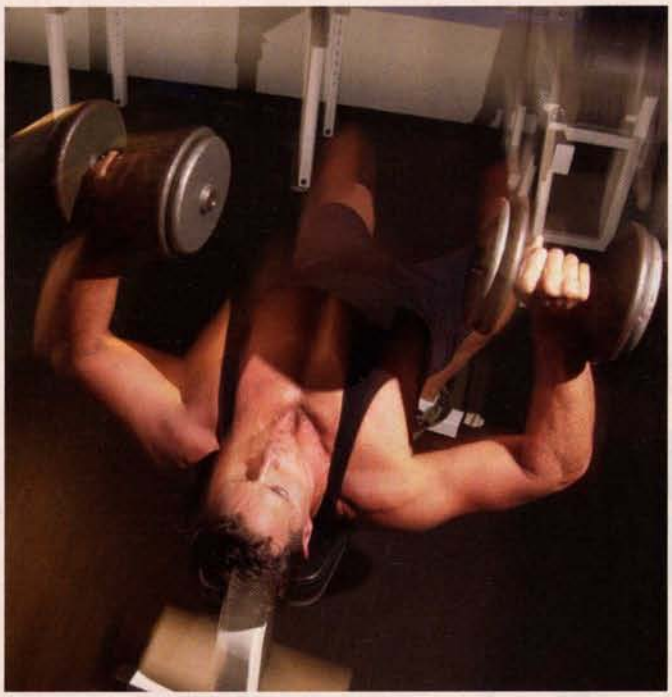
In short, there's no scientific basis for the efficacy of shark cartilage in preventing, treating or curing cancer. The shark is a mystical creature, but there's nothing mystical about shark cartilage. **FM**

Are high reps as effective as low reps for increasing muscular strength?

Some have believed that high repetitions builds muscular endurance and low repetitions builds muscular strength. Actually, muscular endurance and muscular strength are directly related. If lifters increase their muscular endurance, they'll also increase their muscular strength.

Here's an example: One way to measure muscular strength is to have clients perform one repetition with a maximum amount of weight (known as a "one-repetition maximum" or "1-RM"); one way to measure muscular endurance is to have clients complete as many repetitions as possible with a sub-maximum amount of weight. Now, suppose that your client's 1-RM in the bench press is 100 pounds (muscular strength), and he can perform 10 repetitions with 75 pounds (muscular endurance). And after several months of training with high repetitions — say, within a range of about eight to 12 — suppose that he's progressed to the point where he can lift 90 pounds

for 10 repetitions. Given the fact that he increased the amount of weight he could lift for 10 repetitions by 20 percent — from 75 to 90 pounds — it's likely that his 1-RM will now be greater than his previous effort of 100 pounds. So, even though he trained with high repetitions, he increased his muscular strength.



It works the other way, as well. If clients increase their muscular strength, they'll also increase their muscular endurance. Here's why: As they get stronger, clients need fewer muscle fibers to sustain a sub-maximum effort (muscular endurance). This also means that they have a greater reserve of muscle fibers available to extend the sub-maximum effort. **FM**

Is there a difference between a bench press with a barbell vs. dumbbells?

The bench press with a barbell and with dumbbells involve the same major muscles — namely, the chest, shoulders and triceps. And both exercises are performed in the same fashion. But, with a barbell, exercisers can lift more weight. A person might be able to perform eight repetitions with 200 pounds using a barbell, but certainly couldn't perform eight repetitions with a 100-pound dumbbell in each hand.

Lifters aren't suddenly weaker when they use dumbbells instead of a barbell for the bench press. The higher weight cannot be lifted with dumbbells because a good bit of effort is being redirected to balance the weights. In the bench press, a certain amount of effort is required to balance the weight of a barbell, but even more effort is required to balance the weight of dumbbells. With dumbbells, the lifter must balance two weights instead of one. **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 13 books.