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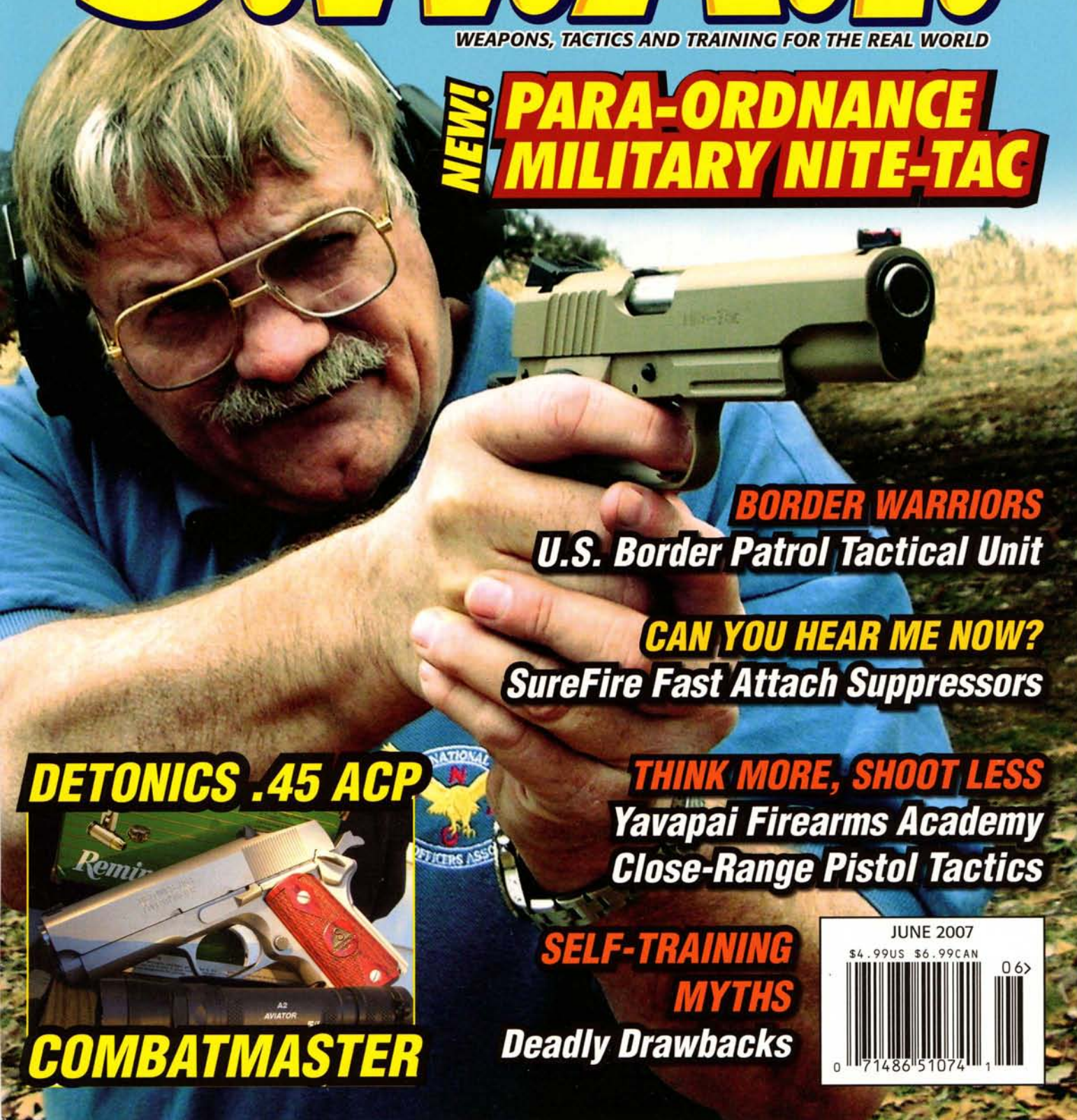
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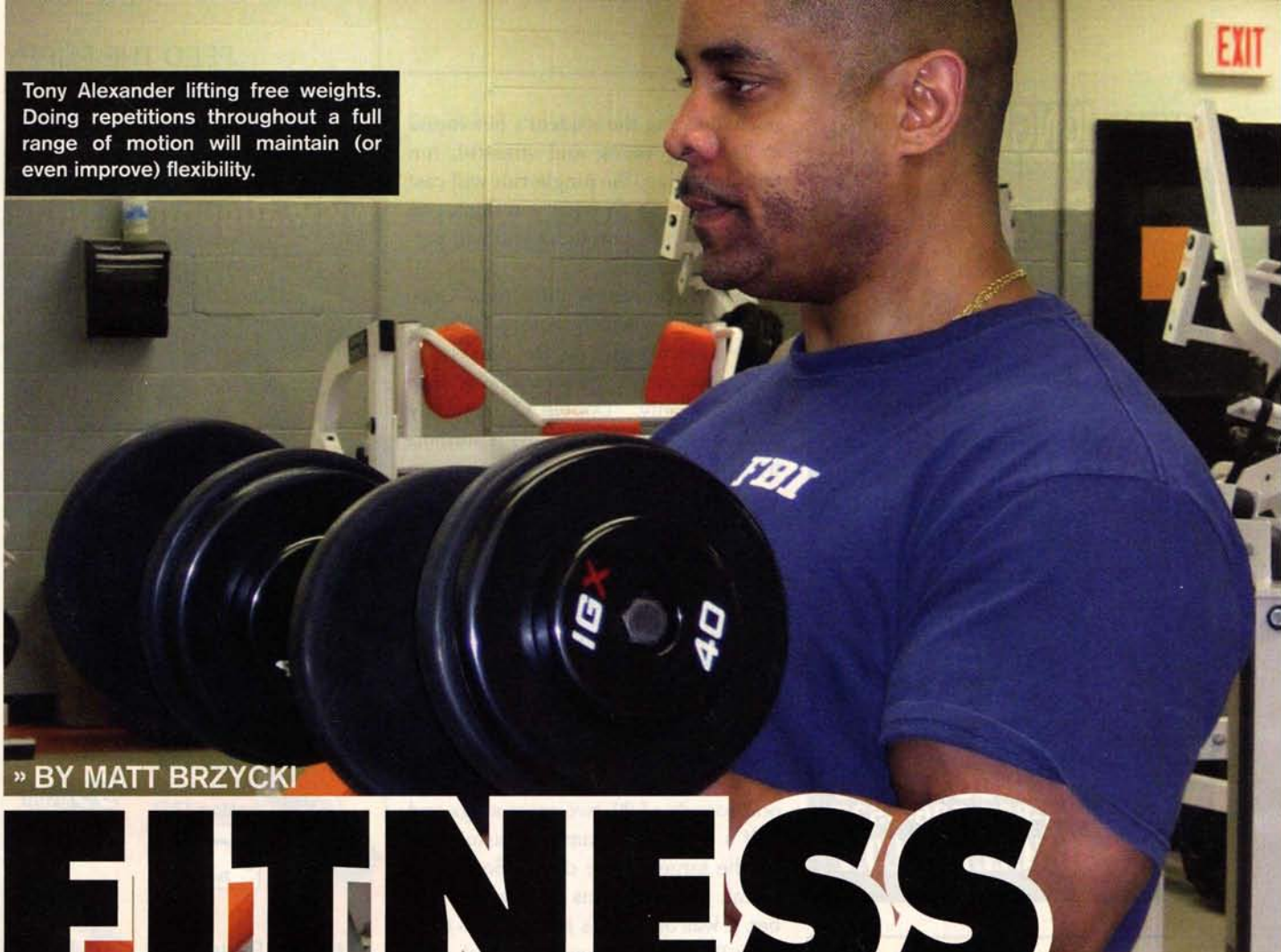
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Tony Alexander lifting free weights. Doing repetitions throughout a full range of motion will maintain (or even improve) flexibility.



» BY MATT BRZYCKI

FITNESS

SEPARATING FACT FROM FICTION

[Editor's Note: To be truly effective in a fight, one must possess the proper tools. This includes mindset, reliable equipment and (although overlooked) being in good physical shape. Even if someone has trained under all the top-tier instructors and owns the best firearms and ancillary equipment available, it does them little good if they don't have enough strength or stamina to stay in the fight. As with training, tactics and weapons, separating fact from fiction is the first step in knowing what really works.]

At one time or another, everyone who has sought to improve their fitness has heard or read bits of advice and other "weight-room wisdom."

Unfortunately, however, not all of the information is true. Let's examine some of the most common beliefs in fitness and see how they hold up to closer inspection.

LIFTING WEIGHTS MAKES YOU BECOME "MUSCLE-BOUND" AND INFLEXIBLE

First, achieving a heavily muscled physique is easier said than done. Although everyone can increase their muscle mass (and strength), the degree to which this

is done is largely a function of genetics. Second, there's no correlation whatsoever between muscle mass and flexibility. Some muscular individuals have poor flexibility; other muscular individuals have outstanding flexibility.

Be advised that you can lose flexibility if you lift weights throughout a partial range of motion. If you don't fully extend your arms during a bicep curl, for example, you'll eventually lose flexibility in your elbow joints. But doing repetitions throughout a full range of motion will maintain—or even improve—flexibility.

FREE WEIGHTS ARE BETTER THAN MACHINES FOR IMPROVING MUSCULAR SIZE AND STRENGTH

Studies have shown that there are no significant differences in the development of muscular size and strength when comparing groups that used free weights and groups that used machines. The fact is that the use of *any* equipment in which a load is progressively applied to the muscles will stimulate improvements in size and strength.

Understand that muscles don't have eyes, brains or cognitive ability. Therefore, muscles cannot possibly know whether the source of resistance is a barbell, dumbbell, selectorized machine, plate-loaded machine or cinder block. To quote Dan Riley, who has more than 25 years of experience as a strength coach in the National Football League, "The equipment used is not the key to

maximum gains. It's how you use the equipment."

HIGHER REPETITIONS TONE MUSCLES AND LOWER REPETITIONS BULK THEM

For years, it's been thought that doing higher repetitions will increase muscular definition ("tone") and lower repetitions will increase muscular size ("bulk"). Yet, there's no scientific evidence to support this belief. In one study, researchers found no significant differences in muscular size (and strength) between a group that trained with sets of four repetitions and a group that trained with sets of 10 repetitions. In another study, researchers found no significant differences in muscular size between a group that trained with sets of 3 - 5 repetitions, a group that trained with sets of 13 - 15 repetitions and a group that trained with sets of 23 - 25 repetitions.

Some people are predisposed toward developing highly defined physiques, while others are predisposed toward developing heavily muscled physiques. Whether your sets consist of low repetitions or high repetitions, you'll still develop according to your genetics (provided that the sets are done with similar levels of intensity).

YOU CAN SELECTIVELY REDUCE FAT FROM SPECIFIC AREAS OF THE BODY

The belief that exercise produces a localized loss of body fat is known as "spot reduction." You cannot selectively lose fat from an isolated area because when you exercise, fat (and carbohydrate) is drawn from throughout your body as a source of energy, not just from one specific area. So you can do abdominal exercises until you pass out, for instance, but this effort won't automatically trim your mid-section.

In one study, researchers evaluated the effects of a 27-day sit-up program on the fat-cell diameter and body composition of 13 subjects. Over this four-week period, each subject performed a total of 5,004 sit-ups (with the legs bent at a 90-degree angle and no foot support). Fat biopsies from the abdominal, subscapular and gluteal sites revealed that the sit-up program reduced the fat-cell

diameter at all three sites to a similar degree. In other words, exercising the abdominal muscles didn't preferentially affect the fat in the abdominal area more than the gluteal or subscapular areas.

THE BODY-MASS INDEX IS A VALID INDICATOR OF BEING OVERWEIGHT

The Body-Mass Index (or BMI) is simply a ratio of someone's height to weight. It has been used as a quick and handy way to estimate if a person is overweight (or underweight, for that matter). But keep in mind that the BMI is just an *estimate*. The reality is that you can have a high BMI yet may not need to lose any weight. Consider this example: An individual who is 6' 2.5" and weighs 208 pounds has a BMI of about 26.7, which is categorized as overweight. But this was the listed height and weight of boxer Evander Holyfield when he first won the World Heavyweight Championship. A quick glance at his physique would reveal clearly that he was nowhere near being overweight. In fact, his percentage of body fat was most certainly in the single digits.

Here's something that should hit a little closer to home: A study found that based on height and weight, the average soldier in the U.S. Special Forces is overweight. It's difficult to imagine that the elite soldiers of our country need to lose weight.

STRETCHING PRIOR TO A PHYSICAL ACTIVITY REDUCES THE RISK OF INJURY

There's very little research that has investigated the effects of pre-exercise/activity stretching on the risk of injury. But two studies that involved a total of 2,630 military recruits (men aged 17 - 35) who were going through basic training found that stretching prior to an activity reduced the risk of injury by 5% (which wasn't statistically significant). Over the same period of time, the expected risk of injury was 20%. This suggests that a 5% reduction in the risk of injury would translate into a reduction in absolute risk by a mere 1%.

This isn't an indictment of stretching; there are a number of benefits to doing it. But when done before an activity,

stretching doesn't make you less prone to injury.

EATING AFTER A CERTAIN TIME OF DAY WILL CAUSE YOU TO GAIN WEIGHT

This belief suggests that if you grab chow one minute later than a designated time, you'll gain weight. The most important thing that determines whether or not you gain (or lose) weight is the number of calories that you consume and expend, not the time of the day.

Along these lines, imagine that you're in Alabama standing a few inches from its border with Georgia. Alabama is in the Central Time Zone and Georgia is in the Eastern Time Zone. So if you're in Alabama and it's 1700, you're supposedly cleared to eat. But if you quickly step across the border into Georgia where it's 1800, it's simply nonsensical to think that you'd now be suddenly more apt to gain weight.

CARBOHYDRATES MAKE PEOPLE FAT

Actually, eating too much and exercising too little make people fat. If anything, it's important for active individuals to consume carbohydrates to fuel their lifestyles. The primary function of carbohydrates is to supply energy, especially during intense exertions. The other two macronutrients that are sources of energy—fat and protein—have major limitations for active individuals. Fat is an inefficient source of energy, so it's preferred during low-intensity efforts when there's no need to be efficient. Protein is actually a last resort, since it's located in the muscles and if you're in a situation where you must rely on it as an energy source, then you're literally cannibalizing yourself.

There's no doubt that eliminating carbohydrates from the diet will inhibit stamina and endurance. Needless to say, that's not a good thing for someone who may go in harm's way.

ACTIVE INDIVIDUALS NEED MORE PROTEIN THAN THEIR INACTIVE COUNTERPARTS

Many individuals think that they need to consume additional protein in order to increase their muscular size and

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strength and, for that reason, take protein supplements. The research on this topic is clear and consistent: The protein needs of active individuals are higher than inactive individuals. But this need has been drastically exaggerated by the supplement industry.

The fact of the matter is that people who consume adequate calories generally obtain sufficient protein. Larger, more active individuals require and consume more calories than the average person. With these additional calories comes additional protein. In other words, the increased protein need of active individuals is met by an increased caloric intake. Those who are concerned that they're not getting enough protein can obtain sufficient amounts simply by consuming more foods that are high in protein.

BOTTLED WATER IS SIGNIFICANTLY BETTER THAN TAP WATER

Most people assume that bottled water is much better than tap water, but what does the research say? One study compared the fluoride levels and bacterial content of commercially bottled water to that of tap water in Cleveland. Researchers examined 57 samples of five categories of bottled water that were purchased from local stores. (The five categories were spring, artesian, purified, distilled and drinking.) They also examined 16 samples of tap water that were collected from four local water-processing plants. (Four samples were taken from each plant on unannounced visits).

Only 5% (3 of 57) of the samples of bottled water contained fluoride levels that were in the recommended range for drinking water as required by the state of Ohio. Meanwhile, 100% of the samples of tap water were in the recommended range. In terms of bacterial count, 15 samples (26%) of bottled water had significantly more bacteria than tap water. Compared to the average bacterial count of the tap water, six samples (11%) of bottled water had at least 1,000 times the bacteria of tap water. One sample of bottled water contained nearly 2,000 times that of the most contaminated sample of tap water.

ENERGY BARS GIVE YOU ENERGY

Many products use the word "energy"

in their names. The implication, of course, is that the product will give you energy. However, it's important to realize that "energy" is derived from calories. The fact is that any food (or drink) that has calories gives you energy. So, technically speaking, a can of non-diet soda is an "energy drink," a chocolate-chip cookie is an "energy disc" and an ice-cream sandwich is an "energy bar."

While on the subject, what about energy bars that taste like candy bars? As they say, if something smells like a fish, it's probably a fish. So if an energy bar tastes like a candy bar, it's probably a candy bar or at best, it's a glorified one—and an expensive one at that. To determine how much a particular energy bar is like a candy bar, check the nutrition facts panel. Is chocolate one of the first ingredients? Remember, the ingredients are listed by quantity from highest to lowest. If chocolate is among the first ingredients, it's a dead giveaway that you're holding a candy bar disguised as an energy bar. In addition, the bar should be low in sugar (as well as total fat and saturated fat). Be advised that sugar can take several forms. Words that end in "ose"—such as dextrose, fructose, and maltose—indicate that the ingredient is a sugar. Not all sugars end in those letters, however: two examples are corn syrup and honey.

THE BOTTOM LINE

The truth is that numerous beliefs about fitness have been repeated so many times for so many years that they've been accepted blindly as gospel. As you've seen, though, plenty of these long-held beliefs have absolutely no factual basis.

If you want to improve your fitness, you must be able to separate science fact from science fiction. Generally speaking, individuals who are physically fit are also more mentally aware. Your level of fitness helps determine whether you stay in the fight or collapse in a soon-to-be-bullet-riddled heap on the pavement. ☉

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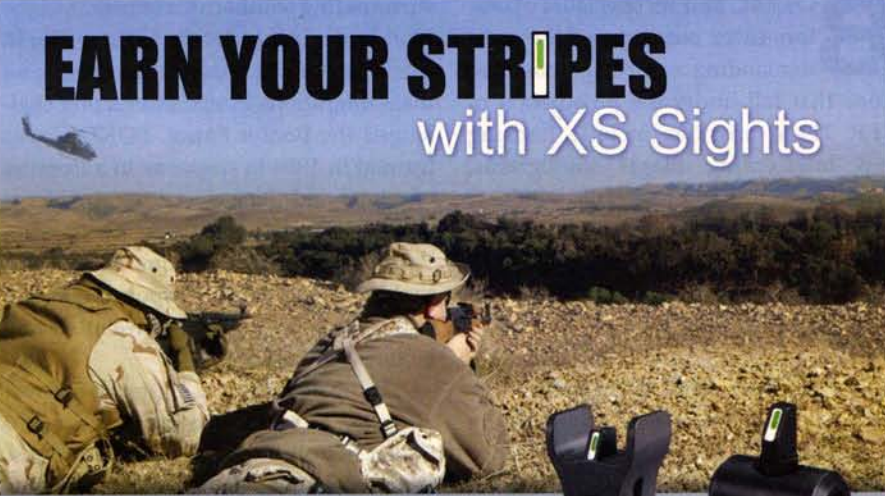









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