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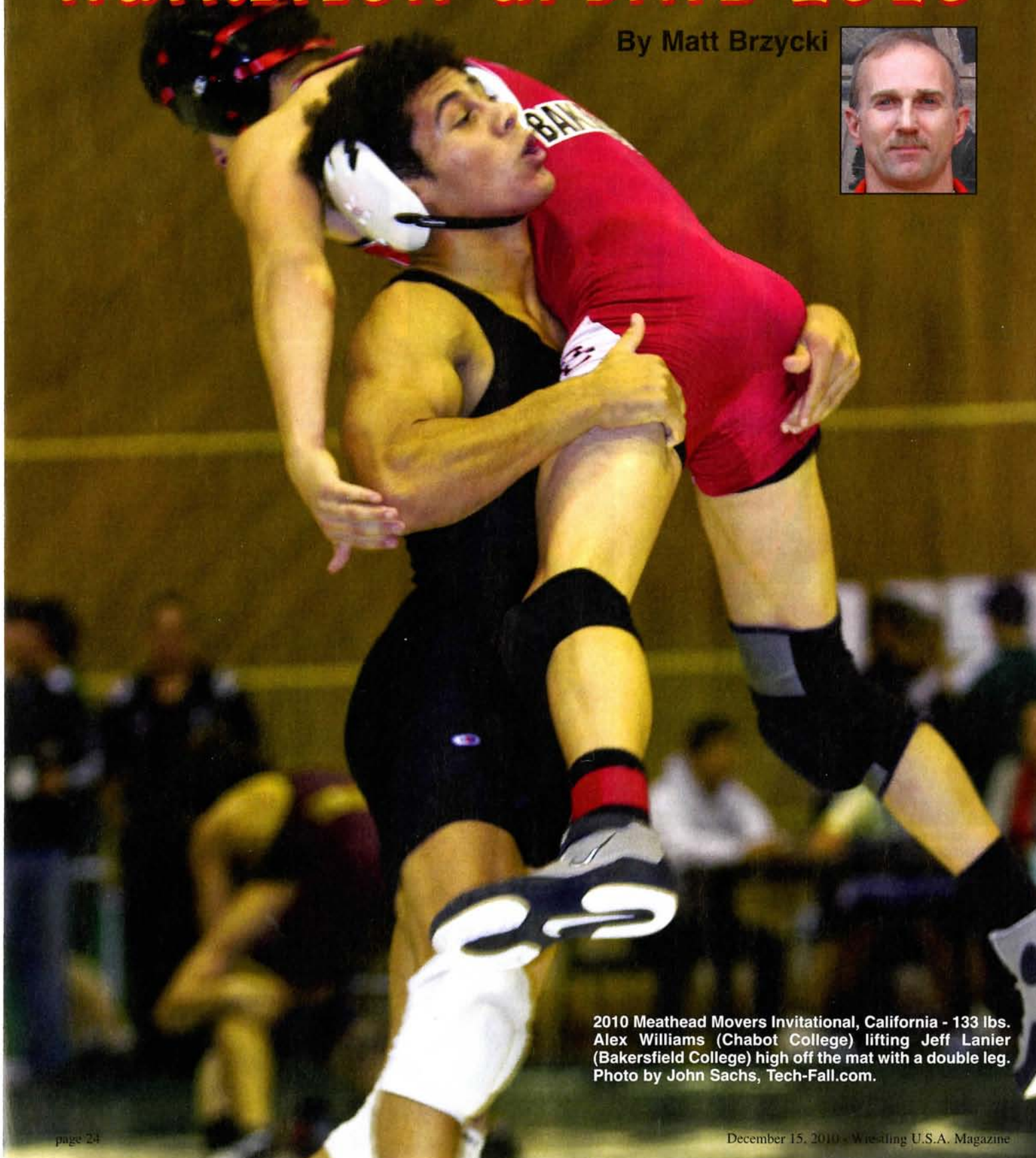
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NUTRITION UPDATE 2010

By Matt Brzycki



2010 Meathead Movers Invitational, California - 133 lbs.
Alex Williams (Chabot College) lifting Jeff Lanier
(Bakersfield College) high off the mat with a double leg.
Photo by John Sachs, Tech-Fall.com.

Nutrition is an important topic of discussion in the wrestling community. Unfortunately, no other aspect of health and fitness is fraught with more misconceptions and misinformation than nutrition.

One of the most popular sources of material on nutrition is magazines. A study by the American Council on Science and Health rated 21 magazines in terms of the accuracy of nutritional information. The researchers discovered that some of the most inaccurate information was found in fitness magazines. In fact, the four magazines that had the least accurate information were Men's Health, Reader's Digest, Muscle & Fitness and Men's Fitness.

The lowest-ranked magazine, Men's Fitness, contained so much misinformation that the researchers wondered if it was "in the business of publishing fiction." For example, an article in its March 2005 issue stated that "alcohol plus a steak dinner works like lighter fluid on your metabolism." Needless to say, there's absolutely no scientific proof whatsoever to support such a wild assertion.

WHAT THE RESEARCH SAYS

The good news is that a great deal of scientific research is conducted on nutrition and published in peer-reviewed journals. Some publications – like the American Journal of Clinical Nutrition and the Journal of the American Dietetic Association – are dedicated exclusively to the topic.

Here's a look at some of the recent research on nutrition and the lessons that can be learned from it.

Calcium

Every day, it seems as if another product or supplement is touted as an effective means to lose weight. One of the latest supplements to garner attention is calcium.

In a long-term study, 340 subjects were randomly assigned to two groups: One group received 1,500 milligrams of calcium carbonate per day and the other group received a placebo that was identical in appearance. The assigned treatment was administered in capsules with meals.

After two years, calcium didn't produce significantly better results than the placebo in bodyweight, body mass index or fat mass. Nor were there any significant differences in abdominal circumference, hip circumference or tricep skinfold thickness.

Lesson learned: Calcium is an important mineral that's essential in blood clotting, muscle contraction, nerve transmission and the formation of bones and teeth but there's no evidence that it promotes weight loss.

Carbohydrates

For many decades, researchers have examined the intake of carbohydrates as a way to enhance performance before and during a physical activity and to quicken recovery after a physical activity. Recently, however, researchers have looked at carbohydrates in a rather unusual way.

In one study, eight highly fit cyclists completed a set amount of work (equal to about an hour) on a bicycle ergometer as quickly as possible on two separate occasions after either rinsing their mouths with a carbohydrate solution or a placebo. (The placebo contained an artificial sweetener.) The researchers found that cyclists produced significantly faster times during the carbohydrate treatment compared to the placebo treatment.

In another study, 10 endurance-trained runners ran on a treadmill as far as possible in 60 minutes on two separate occasions after either rinsing their mouth with a carbohydrate solution or a placebo. (The placebo was unspecified but color- and taste-matched.) The researchers found that the runners completed significantly greater distances during the carbohydrate treatment compared to the placebo treatment.

In yet another study, 12 highly fit triathletes completed a set amount of work (equal to about an hour) on a bicycle ergometer as quickly as possible on four separate occasions after either rinsing their mouth with a carbohydrate solution; rinsing their mouth with a placebo; consuming a carbohydrate solution; or consuming a placebo. (The placebo contained an artificial sweetener.) The researchers found that in the mouth rinse conditions, the carbohydrate treatment produced faster times than the placebo treatment. Even more intriguing was that rinsing the mouth with the carbohydrate solution resulted in faster times than drinking it.

How is it possible that rinsing the mouth with a carbohydrate solution improves performance? Well, researchers aren't sure but some think that the sensation of having the fluid in the mouth activates certain parts of the brain that allow individuals to work harder at the same perceived exertion.

Lesson learned: Performance in activities that require endurance can be improved by simply rinsing your mouth with a carbohydrate solution.

Chocolate Milk

Obviously, recovery is an important factor in achieving optimal performance. For many years, researchers have investigated a wide range of foods, fluids and supplements as a way to expedite recovery. Interestingly, some recent studies have looked at chocolate milk as a recovery beverage.

In one study, nine trained cyclists performed three experimental trials, each separated by at least one week, consisting of a "glycogen-depletion trial," a four-hour recovery period and a cycle to exhaustion. Within 60 seconds into the recovery period, the subjects drank chocolate milk, a carbohydrate replacement drink (Endurox) or a fluid replacement drink (Gatorade). This was repeated two hours into the recovery period. It was found that the subjects cycled significantly longer after consuming the chocolate milk (32 minutes) compared to the carbohydrate replacement drink (21 minutes) and the fluid replacement drink (23 minutes).

A drawback of the study is that it was partially funded by a manufacturer of chocolate milk. Nevertheless, other studies have shown no significant differences between chocolate milk and a carbohydrate recovery beverage.

Lesson learned: Chocolate milk is as effective as carbohydrate beverages in helping to recover after doing a prolonged physical activity.

Conjugated Linoleic Acid

In studies of animals, conjugated linoleic acid (CLA) has been shown to reduce fat mass and increase lean-body mass. But in studies of humans, there are mixed results. Some have shown that CLA decreases fat mass and/or increases lean-body mass while others have shown no effect. Many of the studies that found positive effects had small numbers of subjects and were of short duration which makes it difficult to draw any meaningful conclusions.

In one study, 180 subjects were randomly assigned to three groups: Two groups received different types of CLA and another group received a placebo. In comparison to the placebo group, the groups that were given CLA significantly decreased fat mass and increased lean-body mass. One CLA group lost 3.74 pounds of fat and gained 1.54 pounds of lean-body mass; the other lost 5.28 pounds of fat and gained 1.32 pounds of lean-body mass. So the results weren't exactly breathtaking, especially considering that

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this was after taking CLA for 12 months.

Also worth mentioning is that all three groups reduced their caloric intake over the course of the study. By the 12th month of the study, the CLA groups were consuming at least 105 calories per day less than the placebo group. This, of course, could easily account for much of the difference in the results.

Lesson learned: Unless you're a rat, hamster or some other type of laboratory animal, there's no solid proof that CLA will decrease your fat mass or increase your muscle mass.

Eggs

It has been found that some foods increase satiety (fullness) which could help with weight loss. Is one of those foods the incredible, edible egg?

Researchers in one study randomly assigned 152 subjects into four groups: Two groups ate a "bagel breakfast" (which included cream cheese and yogurt) and two groups ate an "egg breakfast" (which included toast and jelly). One of the bagel groups and one of the egg groups were "suggested" a diet that reduced their intake by 1,000 calories per day. In comparison to the subjects who used the bagel diet, the subjects who used the egg diet had significant decreases in their body mass index, bodyweight and waist circumference.

The study had a major drawback, however. There's no telling how closely the assigned diets were followed since no dietary measurements were taken. Case in point: A deficit of 1,000 calories per day equates to a deficit of 7,000 calories per week; over the course of eight weeks, that's 16 pounds. Yet, the subjects on the egg diet lost about 5.8 pounds and the subjects on the bagel diet lost about 3.5 pounds.

It must be noted that the study was funded by the American Egg Board, an organization whose mission is "to increase demand for egg and egg products."

Lesson learned: When it comes to losing weight, the egg isn't all that it's cracked up to be.

"Healthy" Foods

In an effort to eat better, people tend to choose foods that they think are healthy. But because people think that a food is healthy, do they also think that it has less calories and, therefore, that they can eat more of it?

Researchers at the University of Toronto recruited 99 undergraduate students to participate in a study. The subjects were told that the study was investigating new snack products and that they would taste and rate an oat-meal-and-raisin cookie.

The researchers randomly assigned the subjects to two

experimental conditions. In one condition, the cookie was described as healthy; in the other, the cookie was described as unhealthy. The subjects ate 35% more of the food – or about 56 more calories – when it was described as healthy compared to when it was described as unhealthy. Although 56 calories might not sound like much, do that every day for a year and it works out to 5.84 pounds.

Lesson learned: Even though a food is healthy, eating more of it may result in an unintentional intake of more calories than usual and subsequent increase in weight.

High Fructose Corn Syrup

High fructose corn syrup (HFCS) is a synthetic sweetener that was created in the late 1960s. The manufacturing process starts out with kernels of corn and ends up with a concoction of fructose and glucose. It's found in numerous foods and beverages, ranging from the fairly obvious (yogurt and sweetened beverages) to the totally unexpected (bread and tomato soup).

One study looked at the short- and long-term effects of consuming HFCS. The study consisted of two experiments. In Experiment 1, male subjects who were fed

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2010 Rocky Mountain Nationals - 145 lbs. Dakoda Curtis (Alamosa) tries to return Micheal Miller (Tmnt) to the mat in a battle that ended with an injury default and a win for Miller. Photo by Dean Vande Berg.

HFCS with their meals gained more weight than those who were fed sucrose (a sugar) with their meals and those who were just fed their meals for eight weeks. In Experiment 2, male and female subjects who were fed HFCS with their meals gained more weight and abdominal fat than those who were just fed their meals for six months (males) and seven months (females).

However, the study was met with heavy criticism. Some described the study as "flawed" with "inconsistent results." It was noted that the subjects were fed enormous amounts of HFCS and even then, the weight gain was extremely small ("statistically indistinguishable"). A final point is that the "subjects" in this study were rats. And any data collected on rodents cannot be extrapolated to humans.

Besides, it's totally unreasonable to think that weight gain can be narrowed down to one single food or ingredient. The cause of weight gain is a function of two variables: eating too much and exercising too little.

Lesson learned: High fructose corn syrup has no nutritional value but with respect to being the cause of weight gain, it's a miscast villain.

Organic Foods

Even though organic foods are more expensive than conventional foods, many people don't seem to mind

paying a higher price for foods that they feel are healthier and nutritious. But are organic foods really better than conventional foods when it comes to nutritional value?

British researchers examined 55 studies that were deemed to be of satisfactory quality. The studies analyzed 100 different foods and presented data on 455 nutrients and relevant substances that the researchers grouped into 98 nutrient categories. It was found that organic and conventional foods are comparable in their nutrient content.

Lesson learned: Conventional foods are just as nutritious as organic foods.

Solid v Liquid Food

A few studies have shown that solid foods have a greater impact on satiety than beverages. Obviously, this would be helpful for wrestlers who must manage their weight.

In a study that was conducted at Penn State, 58 subjects went to an eating lab once a week for five weeks. On each occasion, the subjects consumed a "preload" of apples in a different form that had the same number of calories, either as a whole apple, applesauce, apple juice with fiber and apple juice without fiber. On a fifth occasion, the subjects received no preload (the "control intake"). The subjects were then given lunch (cheese tortellini and tomato sauce) and told to "eat and drink as much or as little" of the meal and water as desired. When the subjects ate an apple as a solid food prior to lunch, they consumed significantly less calories in comparison to when they ate an apple in other forms.

Lesson learned: Eating solid fruit at the start of a meal can reduce the number of calories that you consume.

THE LAST REP

Good nutrition is important for wrestlers. Equally important is choosing legitimate sources of information on the topic.

Matt Brzycki has authored, co-authored or edited 17 books on strength and fitness including four that are devoted to wrestling. His latest book is Youth Fitness: An Action Plan for Shaping America's Kids.