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Wrestling Camp 2002 Q&A On Strength and Conditioning

By Matt Brzycki

The Princeton University Wrestling Camp - directed by Head Coach Michael New - was held from July 8 - 11, 2002. This was the second year for the camp and, based upon the number of campers in attendance, it was deemed a success. On the Tuesday evening of camp week, I had the opportunity to speak to the campers about strength and conditioning for wrestling. A question-and-answer session made for some great discussions. What follows is a sampling of questions that the wrestlers asked about strength and conditioning along with my responses. (In crafting this into the format of an article, I have taken the liberty of including a bit more information than I gave the campers.)

Q: What do you think of ephedrine?

A: First of all, I am not a big fan of herbs or other nutritional supplements. I think that you can get all of the nutrients that you need from the foods that you eat as long as you are consuming a balanced diet that has sufficient calories. Remember, too, that the Food and Drug Administration does not regulate nutritional supplements for safety, effectiveness, purity or potency. Due to this lack of federal oversight, you really do not know exactly what is in the products. It is not uncommon for independent researchers to find ingredients in the products that were not listed on the labels. Some nutritional supplements may also contain contaminants - most likely from the manufacturing process - such as aluminum, lead, mercury and tin.

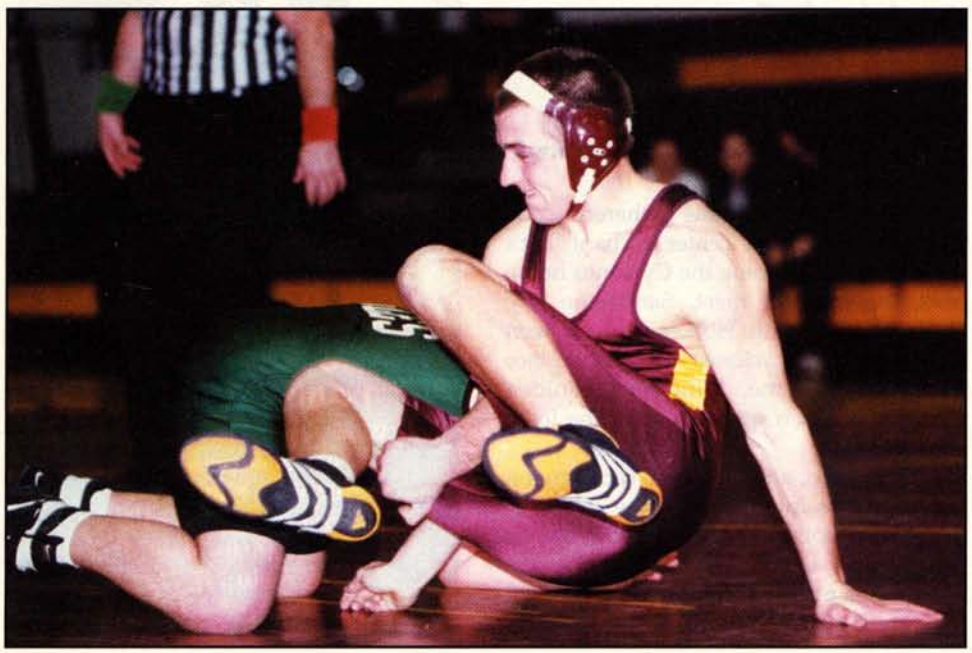
At any rate, ephedrine - also known as "ephedra" - is an over-the-counter herbal stimulant that is found in many cold and flu medications as well as supplements that are marketed for weight loss. Understand that ephedrine is an amphetamine-like compound that has many adverse side effects. For one thing, it increases your heart rate and blood pressure. Personally, I would not want to elevate my heart rate and blood pressure and then do any type of physical training. Other common side effects from ephedrine include dizziness and headaches. The use of ephedrine also increases the potential for dehydration and has been linked to seizures, strokes and heart attacks. Since the mid-90s, the Food and Drug Administration has received more than 800 reports of adverse side effects related to the use of ephedrine - including at least 50 deaths. The National Collegiate Athletic Association [NCAA] and the National Football League [NFL] have banned the use of supplements that contain ephedrine.

Q: What is the best thing to eat after a workout?

A: During intense activity - whether it is strength training, conditioning or practicing - your body's preferred source of energy is carbohydrates which circulate in your bloodstream as glucose and are stored in your liver and muscles as glycogen. It stands to reason, then, that your post-workout meal should contain foods that are high in carbohydrates. Now, keep in mind that there are different types of carbohydrates. After an intense workout, it is best to consume foods that have a high Glycemic Index such as bananas, watermelons, waffles, rice cakes, corn flakes, white rice, baked potatoes, white bread and buckwheat pancakes.

There is some evidence to suggest that combining the carbohydrates with a small amount of protein can expedite recovery by improving the rate at which your glycogen stores are replenished. However, it appears that simply increasing the quantity of post-workout carbohydrates will have the same results. Nonetheless, consuming a small amount of protein following an intense workout may aid in the repair of muscle tissue. Finally, it is also important to rehydrate after a workout. You should consume about 16 ounces of water for every pound of bodyweight that you lose during your training.

Incidentally, foods consumed prior to a workout should also be high in carbohydrates. But this time, the foods should have



New Jersey's Mike Liccketto, Chaddon Heights, scores a reversal on Steve Lipski, West Deptford.

a low Glycemic Index such as grapefruit, milk, pears, plain pizza, apples, apple juice, spaghetti, oranges, macaroni, oatmeal and orange juice. The idea here is to consume foods that are easily digested and do not elevate your blood sugar.

Q: Is there a certain sequence that I should use to train my muscles?

A: Yes. You should begin your workout by training your neck. The reason for this is that - from the standpoint of injury prevention - the neck muscles are the most important ones in wrestling. An injury to your knee is one thing. But an injury to your neck could have catastrophic results.

After this, you should exercise your muscles from largest to smallest. Your hips and legs have the largest - and most powerful - muscles in your body. Besides having a huge amount of muscle mass, your hips and legs are involved in many techniques on the wrestling mat. Train your hips first, followed by your upper legs and then your lower legs. In other words, start with your hips and work your way down to your ankles. Assuming a total-body workout, you should next train the major muscles of your torso: your chest, upper back (or "lats") and shoulders. Once you have done this, you can train your upper and lower arms. You would not want to train your biceps before you do an exercise for your upper back such as the lat pulldown. That would be a great sequence for your biceps but your upper back - which is the target of the exercise - will not get enough stimulation. Nor would you want to train your triceps before you do an exercise for your chest such as the bench press. That would be a great sequence for your triceps but your chest - which is the target of the exercise - will be having a picnic. After this, you should train your mid-section. This includes your abdominals and lower back.

In short, you should address your muscles in the following sequence: neck, hips, legs, torso and mid-section.

Q: What is the best lifting program for wrestling?

A: I think that it is necessary to first understand the reasons why you should be strength training. And these reasons may be different from what you might think. The main purpose of strength training is to decrease your injury potential. The operative word here is "potential." Just because you improve your strength does not mean that you will never get hurt. Often, injuries are simply a matter of being in the wrong place at the wrong time. But if you can strengthen your muscles, connective tissues and bones to tolerate more stress, you will certainly reduce your risk of getting injured. And if you did suffer an injury, it will be less severe and you will recover from it more quickly. The second purpose for strength training is to increase your performance potential. Again, the operative word here is "potential." Just because you improve the strength of your muscles does not mean that you will automatically be a better wrestler. You must still practice and perfect your wrestling skills in order to learn how to apply your increased strength on the wrestling mat.

Quick story: Greg Parker, our 174-pounder who finished second at this year's [2002] NCAA Championships, did not lift weights in high school. He said that because of this, he had to perfect his wrestling technique as much as possible. When he arrived at Princeton University, he began lifting weights on a regular basis and has dramatically improved his muscular size and strength. Now, he can execute his moves more easily and also do moves that were previously difficult to do.

Having said that, there is really no "best" or optimal program for wrestling. Many types of programs can give you favorable results. The program that you ultimately choose to do should be based upon five criteria.

Number one: The program must be productive, It does not make sense for you to invest time in a program if it does not produce meaningful results. A program will be productive as long as it is based upon scientific research, common sense and deductive reasoning not unfounded advice, wild speculation and wishful thinking.

Number two: The program must be comprehensive. A program should address all of the major muscles in your body - not just the "showy" ones. In addition, a comprehensive program is one that is performed year-round -including throughout the off-season and the in-season. Training during the season is especially important

since this is when you need to be at your best in terms of strength and conditioning.

Number three: The program must be practical. In other words, it must be relatively easy to understand. In some instances, programs are grossly overcomplicated and correspondingly confusing. Strength training need not be complicated.

Number four: The program must be efficient. It should produce the maximal possible results in the minimal amount of time. A program that requires you to lift weights for lengthy periods of time or more than several workouts per week is not an efficient use of your time . . . nor is it necessary. You should invest time in the weight room not spend time.

And number five: The program must be safe. At first glance, many programs can look quite appealing. Closer inspection, however, may reveal that the programs are highly questionable in terms of safety. This criterion is actually the most important of the five. There is no need whatsoever to perform potentially dangerous activities or exercises in the weight room.

So the program that you choose for wrestling should be productive, comprehensive, practical, efficient and safe.

Q: What are some good exercises for the neck?

A: Great question. As I said earlier, your neck muscles are the most important ones in your body in terms of preventing catastrophic injury. If you sustain a severe neck injury, you could become paralyzed. So it is critical that you strengthen your neck.

If you have access to a neck machine, you are fortunate. But if you do not, there is no need to worry. The thing to understand is that you do not need a $3,000 machine to train your neck. You can do manual-resistance exercises for your neck with the aid of a partner. Two excellent exercises are neck flexion and neck extension.

To position yourself for neck flexion, lie face up on the back pad of a bench and place your feet flat on the floor. Position your head over the end of the back pad, interlock your fingers and place them across your chest. The spotter should stand alongside your head and apply resistance against your chin with one hand and your forehead with the other. To do the exercise, pull your head as close to your chest as possible as the spotter applies resistance evenly throughout the full range of motion. Pause briefly in this mid-range position with your chin near your chest and then resist as the spotter pushes your head back to the starting position with your head hanging down to provide an adequate stretch.

To position yourself for neck extension, lie face down on the back pad of a bench and place your hands and feet on the floor. Position your head over the end of the back pad. The spotter should stand alongside your head and apply resistance against the back of your head. To do the exercise, extend your head backward as far as possible as the spotter applies resistance evenly throughout the full range of motion. Pause briefly in this mid-range position with your neck extended and then resist as the spotter pushes your head back to the starting position with your chin near your chest to ensure an adequate stretch.

Q: What do you think about isometrics?

A: Basically, isometrics are exercises in which you push or pull against an immovable resistance. Their popularity increased enormously in the middle of the 1900s after two German researchers - Hettinger and Muller - released their findings that showed the benefits of isometrics.

Can you get stronger by doing isometrics? Absolutely. But isometrics have several disadvantages. For one thing, isometrics increase your blood pressure beyond what would be normally encountered when strength training with conventional methods. In addition, isometrics do not involve full-range repetitions. As a result, any increases in strength are specific to the joint angle being worked plus or minus a small number of degrees. And since isometrics do not involve full-range repetitions, your muscles do not receive any stretch at all. So after a while of doing a program of isometrics, you will likely lose flexibility.

Q: What is the best way to lose fat and still have energy?

A: This is an interesting question. In order to lose fat, you must produce a caloric deficit where the calories that you expend or "burn" are greater than the calories that you consume or eat. Now, the caloric deficit should not be more than about 500 - 1000 calories below your normal daily caloric needs. If you lose more than about 1% of your bodyweight per week, it is likely that some of the weight loss will be the result of decreased lean-body mass and/or water rather than body fat. However, if the weight loss is less than about 1% of your bodyweight per week and is the result of a rigorous training program in conjunction with a reduced caloric intake, then it will probably be in the form of decreased body fat. You can produce a caloric deficit three ways: By decreasing your caloric consumption, increasing your caloric expenditure or doing a combination of the two. In fact, proper weight loss should be a blend of consuming less calories and expending more calories.

If your caloric intake is too low or restrictive, then you will not have much energy. So the key to losing fat while still having energy is to create a caloric deficit by decreasing your caloric consumption and increasing your caloric expenditure in moderate amounts.

Q: Why are some people just naturally bigger and stronger than others?

A: The reason for this is because each person - except for identical twins -is unique with a different genetic potential for achieving muscular size and strength. Some people are predisposed toward developing a high level of muscular size and strength; others are not as fortunate. For the most part, you cannot change the qualities that you have inherited from your ancestors. Inherited characteristics that greatly influence your muscular size and strength include your predominant muscle-fiber type and the insertion points of your tendons. But regardless of your genetic destiny, your goal should be to realize your physical potential as a wrestler.

Matt Brzycki has been involved in the strength and conditioning of collegiate wrestlers for more than 20 years. Since 1986, he has authored more than 70 articles for *Wrestling USA Magazine*. Reprints of 42 of these articles have been updated and adapted into book form (Wrestling Strength: The Competitive Edge and Wrestling Strength: Prepare to Win) and are available through Cardinal Publishers Group (317-879-0871). He is also the author of A Practical Approach to Strength Training and the editor of Maximize Your Training, a 455-page book that features chapters written by more than 30 strength and fitness professionals.