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WRESTLING CAMP

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The Princeton University Wrestling Camp, directed by Head Coach Michael New, was held from July 9 - 13, 2000. One evening, I had the pleasure of speaking to the campers about strength and conditioning for wrestling. A question-and-answer session proved to be quite popular. What follows is a sampling of questions that the wrestlers asked about strength and conditioning along with my responses:

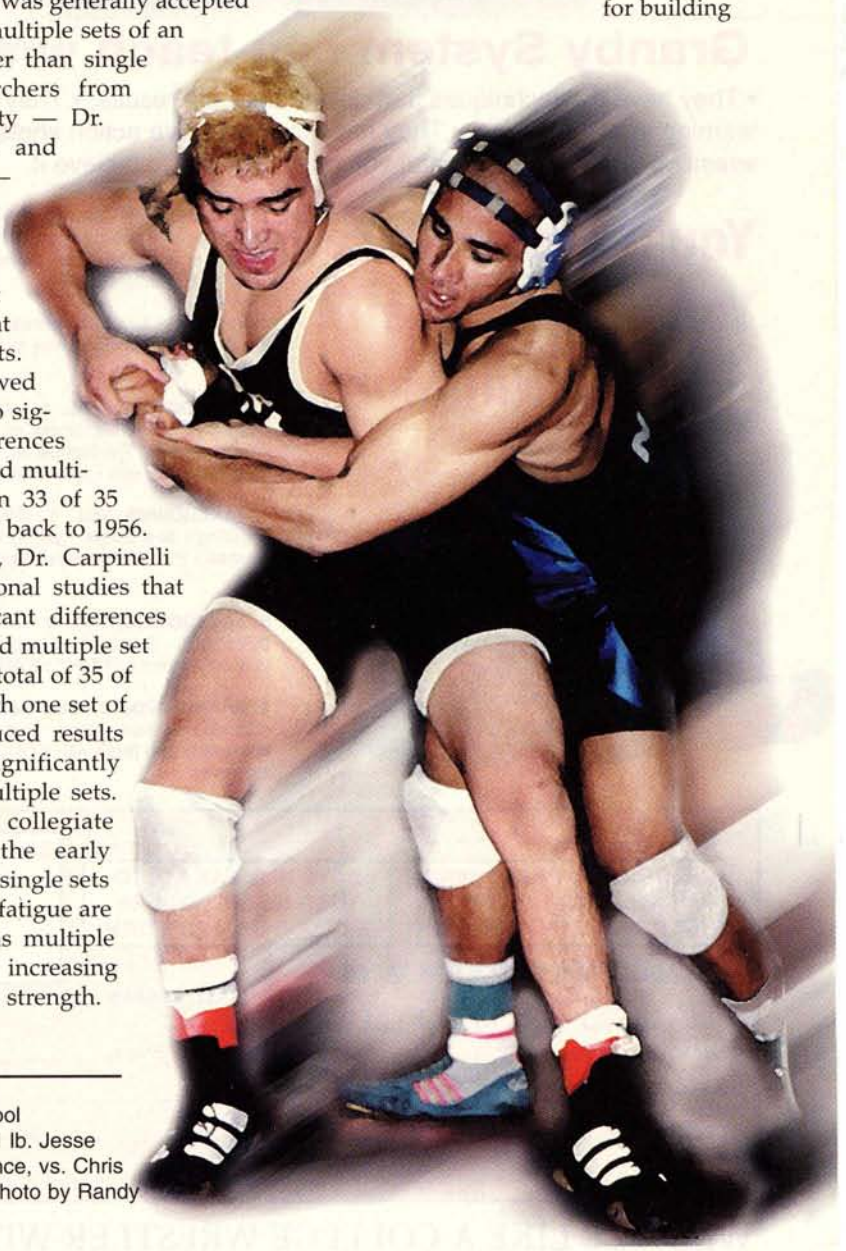
Q: What should our diets consist of?
A: To obtain credible information on nutrition, you should not go to a GNC Store. Nor should you ask individuals who are willing to give you the "secret" to good nutrition only later try to sell you a product, a book, or a supplement. The people that you should seek for legitimate nutritional information are registered dieticians. The information that I'm about to tell you is consistent with what you'd hear from the majority of registered dieticians and others who are not trying to take money out of your pocket. Most of your calories should be in the form of carbohydrate. That's your body's preferred fuel during intense activity. At least 65% of your calories should be from carbohydrate. Roughly 15% of your calories should come from protein and no more than 20% from fat.

Q: So how much protein do I need?
A: The Recommended Dietary Allowance (RDA) for protein is 0.8 grams per kilogram of bodyweight per day. If you don't know your bodyweight in kilograms, simply divide your weight in pounds by 2.2. So, if you are 220 pounds, you weigh 100 kilograms. To determine your RDA for protein, multiply your bodyweight in kilograms by 0.8. In this example, you'd need about 80 grams of protein per day. Since there are four calories in a gram of protein, this is the equivalent of about 320 calories coming from protein. Research has established the fact that individuals who are involved in rigorous training either strength training or endurance training require a bit more than the RDA. For these individuals, the amount of daily protein intake appears to be about 1.5 - 2.0 grams per kilogram of bodyweight per day. However, this increased protein requirement is usually met through a regular diet without any need for additional supplementation.

Q: I've heard some people recommend two sets of an exercise and others three sets. What do you think?
A: The number of sets that should be done for each exercise is a hotly debated topic. For years, it was generally accepted that performing multiple sets of an exercise was better than single sets. Two researchers from Adelphi University — Dr. Ralph Carpinelli and Dr. Robert Otto — did a comprehensive literature review of all relevant research that examined different numbers of sets. Their review showed that there were no significant differences between single and multiple set training in 33 of 35 studies that dated back to 1956. In a later review, Dr. Carpinelli noted two additional studies that found no significant differences between single and multiple set training. That's a total of 35 of 37 studies in which one set of an exercise produced results that were not significantly different from multiple sets. Having trained collegiate wrestlers since the early 1980s, I think that single sets done to muscular fatigue are just as effective as multiple sets in terms of increasing muscular size and strength.

Q: After you do a workout of one set per exercise, is it okay to go back and repeat it again?
A: Assuming that you did each set to the point of muscular fatigue, there's really no benefit in doing it again. I'm not saying that you can't; I'm just saying that if you train to exhaustion, it's not really necessary to do more than one set of an exercise.

Q: What do you think of the Jammer™ for building



California High School Championships. 171 lb. Jesse Juarez, North Torrance, vs. Chris Lopez, Northview. Photo by Randy Martin.

explosiveness?

A: Well, you might be able to demonstrate more explosiveness when performing the Jammer™ , but that doesn't necessarily mean that this explosiveness will transfer or "carry over" to the wrestling mat. That also goes for other exercises done in an explosive fashion, by the way. As a side note, the Jammer™ is one of many devices that have been promoted for what's become known as "ground-based training." If you aren't familiar with the term, ground-based training is the notion that since, for the most part, athletes compete with their feet in contact with the ground then that's how they should lift weights. In other words, it is the belief that all exercises should be done while standing. This suggests that any exercise done in a seated or lying position is utterly worthless including the bench press, incline press, dip, chin, lat pulldown, seated row, seated press, leg press, leg extension, leg curl and abdominal crunch. Obviously, you can get stronger in all of those exercises and others even though they're not done in the standing position. Many of you know that from personal experience because you've improved your strength in those exercises. So, the notion of ground-based training is well-meaning but without merit.

Q: What should I eat right before I lift?

A: Actually, I don't think that you should eat anything right before you lift. If you're going to be training in an intense fashion — and you should — any food intake prior to your workout could lead to stomach upset and/or nausea.

Q: My left shoulder hurts when I do tricep extensions. What's wrong?

A: I'm not sure what's wrong with your shoulder but if a joint hurts when you do an exercise then the exercise should be modified or eliminated. And let's distinguish between muscle pain and joint pain. Generally speaking, muscle pain is okay. That just means you're working hard. On the other hand, joint pain is not okay. That means you may very well have an orthopaedic problem. If that's the case, you should consult with certified sportsmedical personnel. In terms of the tricep extension, try decreasing the weight that you normally use and do the movement more slowly. This will reduce the orthopaedic stress. If that doesn't work, try doing the exercise one arm at a time. Or use a different exercise for your triceps. But if joint pain is present in any exercise for your triceps — or other body parts — you should eliminate that exercise from your routine. Remember, the key is to do pain-free exercise.

Q: What do you think about energy bars?

A: First, keep in mind that use of the term "energy" can be misleading. Numerous products use the word "energy" in their name. This suggests that the product will improve your stamina or make you more energetic. In truth, calories provide you with energy and three nutrients provide you with calories: carbohydrate, protein and fat. In short, we get energy from food. So, technically, a can of soda is an "energy drink," a hot dog is an "energy roll," a pad of butter is an "energy stick," a slice of bacon is an "energy strip," a chocolate chip cookie is an "energy disc" and an ice cream sandwich is an "energy bar." At any rate, there's nothing inherently wrong with most of the products that have been dubbed "energy bars." So it's okay if you want to eat energy bars — especially when it's more convenient for you because of time constraints. Just don't make them the focal point of your food intake. Remember, there's nothing wrong with energy bars . . . but there's nothing magical about them either.

Q: What about creatine?

A: Creatine has received much attention in the athletic community and the media. There are many anecdotal reports that creatine works but scientific research paints a different picture. The majority of studies on creatine have been conducted in a controlled, laboratory setting. Some of these studies have shown that creatine enhances performance. However, most of those studies have examined performance on a stationary cycle. That'd be great if there were competitions in stationary cycling. But there aren't. There also have been studies conducted on creatine outside a laboratory setting that examined performance in activities that are more specific to real-life athletics such as running and swimming. In virtually every study conducted outside the laboratory, there were no performance enhancements associated with creatine supplementation. In some instances, performance actually worsened.

From a safety standpoint, understand that the long-term risks of using creatine are unknown. It is thought that potential side effects include weight gain (most likely from water retention), diarrhea and muscle cramping. Based upon the scientific information that is available at this point in time, I would not want my son to take creatine. If you do decide to use creatine, make sure that you do not exceed the recommended dosages that are indicated on the label.

Q: What's your opinion on doing the shoulder press and lat pulldown behind the head?

A: This is a great topic for discussion. Many in the sportsmedical community avoid prescribing either of those exercises. The reason is that there is more orthopaedic stress in the shoulder joint when a bar is pressed or pulled behind the head rather than in front. The best description is a tightness or a pinching in the shoulder joint. My position is that these exercises are acceptable as long as a person can do them in a pain-free fashion. If not, then the exercises should be removed from your program and replaced with alternatives that are orthopaedically acceptable.

Q: Does chromium melt fat?

A: Well, fat can certainly melt. But in order to do so, your body temperature would be so high that your brain would boil and your blood would probably coagulate. To answer your question, though, the supplement chromium does not melt fat. Nor does it promote fat loss in any way.

Matt Brzycki is the Coordinator of Health Fitness, Strength and Conditioning Programs at Princeton University. He has designed and administered strength and conditioning programs for collegiate wrestlers since 1980.