



TRAINING AND NUTRITION FOR AMATEUR WRESTLING

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KEY POINTS

- In most cases, children over 10 years of age can begin serious training for wrestling. For overall development and appreciation of various sports, children should not specialize in wrestling until they are in college but should be exposed to a wide variety of athletic endeavors.
- Youngsters who have a competitive nature, natural athletic ability, and good parental support tend to become successful wrestlers.
- Recent rules changes have had the positive effect of emphasizing year-round conditioning and nutrition to maintain a constant body weight rather than the former practice of using in-season cycles of rapid body weight loss and gain.
- Some of the best overall training strategies for wrestlers include the use of repetitive wrestling drills with a comparably skilled or somewhat more skilled partner and continual attention to correcting weaknesses. For young wrestlers, it is important that practice sessions be varied so they become enjoyable. This can help prevent early burnout.
- Wrestlers should consume a balanced, relatively high-carbohydrate diet on a daily basis. Meal-replacement beverages can be useful in the hours before competition to minimize bulk in the gastrointestinal tract and after competition when appetite may be suppressed. High-carbohydrate supplements are helpful between competitions, especially in tournament situations, to speed restoration of glycogen stores in the body. Sports drinks can help ensure adequate bodily hydration before and during practice sessions and tournaments and can accelerate rehydration after a practice or a match.

INTRODUCTION

Amateur wrestling is one of the oldest sports on record, pitting one competitor against another in a battle of skill, strength, power, endurance, and intelligence. Although amateur wrestling may not have the "bone-crushing excitement" that appears to draw fans to professional wrestling, those who are familiar with the challenges of amateur wrestling can appreciate the skills employed to misdirect the opponent, to take the opponent down without placing oneself in jeopardy, and to turn the opponent's shoulders to the mat when the opponent has no intention of allowing that to happen. To achieve

success in amateur wrestling, you must be able in split-second intervals to direct the laws of physics against your opponent before the opponent can employ them against you. In the end, although teammates can be psychologically supportive, your success or failure depends only on how well you can combat your opponent.

Because wrestlers must compete in pre-specified body-weight classes, they must carefully regulate their dietary intakes of energy, carbohydrate, fat, and protein. In addition, they should resist the lure of wrestling in low body-weight classes that may require them to lose body weight rapidly by dehydration to qualify for the weight class. Fortunately, recent rules changes requiring the regular monitoring of body fat and hydration status have reduced this practice of rapid dehydration. Finally, wrestling is a contact sport and can result in serious injury to muscles, bones, and joints. There are also opportunities for the spread of contagious skin diseases, including strains of the Herpes virus. Strength training, appropriate hygienic practices, and certain medications can help minimize these problems.

We asked a group of expert panelists to discuss these and other issues associated with amateur wrestling. Scott Anderson is head athletic trainer at the University of Oklahoma, a perennially strong intercollegiate wrestling power. Russ Hellickson is head wrestling coach at The Ohio State University; he was a silver medalist in the 1976 Montreal Olympics and has produced many NCAA champions in his coaching career. He has been a television commentator for Olympic wrestling since 1984. Greg Landry is a pediatrician at the University of Wisconsin-Madison Medical School and is a team physician for the university's athletic teams. Dr. Landry was instrumental in helping to develop Wisconsin's high-school program on minimal wrestling weight, the first in the nation. Karen Sossin is a nutrition consultant to the New York Public High School Athletic Association and has written a chapter on nutrition for wrestling in a new book, *Sports Nutrition: A Guide for the Professional Working With Active People*, published by the American Dietetic Association.

1. What is the earliest age at which a child should begin participating in wrestling?

Landry: Playing around on the mat can occur as early as four or five years of age, but true competition should wait until the kids are at least seven or eight years old. Many children do not really enjoy

competition until 10 or 11.

Anderson: Wrestling prior to age 10 may lead to burnout. Among the factors that have been associated with athletic “burnout” are: 1) very high self- and external expectations; 2) a win-at-all cost attitude; 3) parental pressure; 4) long practices with little variety; 5) inconsistent coaching practices; 6) overuse injuries; 7) excessive time demands; and 8) love from others determined by winning or losing.

Too often, children, especially boys, are in effect being “red-shirted” by delaying their entry into school or by repeating an early grade so that they will presumably be more physically mature during their years of high school sport participation. The current trend towards early specialization in sport participation is a concern. The policy of the American Academy of Pediatrics is that children involved in sports should be encouraged to participate in a variety of different activities and develop a wide range of skills. Their view is that young athletes who specialize in just one sport may be denied the benefits of varied activity while facing additional physical, physiologic, and psychological demands from intense training and competition.

2. What traits predispose a child to succeed in wrestling, both from an enjoyment standpoint and a win-loss standpoint

Anderson: As always, natural ability is a key component, and the athlete must have a competitive nature, seeking to prove oneself against the best. Success is often determined by the quality of parental involvement. Balanced parental support can be a sustaining, encouraging force. Self-determination is a key to success in any sport but especially so in an individual sport such as wrestling, which may entail many hours of solitary training and conditioning. A desire to learn and a willingness to accept instructions are crucial, as are a continual striving to improve and a strong work ethic—win, lose, or draw.

Landry: There is no question that wrestling attracts kids who are innately intense. The youngster with some natural body control and good balance will also be apt to be successful in wrestling.

3. How have the approaches to training and nutrition changed now that guidelines for weight-class selection are in place at the NCAA level and among many state high-school associations?

Hellickson: The old approach was to lift weights in the off-season to maximize muscle size and strength with the expectation that the wrestler could maintain or at least minimize losses in strength during the season by focusing on dehydration to “make weight.” With the advent of body-fat testing and tests for hydration, this strategy has disappeared. You can’t fool the calipers or the tests for urine specific gravity. Wrestlers and coaches now are much more likely to maintain a year-round approach to controlling body weight. At the expense of exclusive and intensive strength training, wrestlers now include an aerobic component to their training as a calorie burner to help keep body fat low. A wrestler who focuses exclusively on pumping iron may move himself up a weight class or two and out of the starting lineup. If he gets too big, he does not have enough time in the competitive season to reduce his weight to make the weight class within the constraints of the NCAA guidelines.

Anderson: I agree with Coach Hellickson that the rules changes have served to increase year-round, rather than seasonal, adherence to nutritional and conditioning programs. There is an increased

focus on nutrition and education for the athlete, with more emphasis on lifestyle diet and more consistent maintenance of body weight within a narrower range around the competition weight than had been the case before the new guidelines.

Landry: Restrictions on weight cutting have helped wrestlers spend more time on training and technique rather than weight cutting. The smart wrestlers still pay close attention to diet and weight control on a day-to-day basis to prevent the need for rapid weight loss. The wrestlers look healthier at weigh-ins and seem to be enjoying the sport to a greater degree.

Sossin: Similar to what was done in Wisconsin in 1989, the New York State Public High School Athletic Association established a Wrestling Minimum Weight Certification Program in 1998. Coaches now participate in statewide instruction by dietitians on weight loss and weight maintenance, hydration, and sports nutrition principles for peak performance. As a result of the program, the lines of communication have opened, and coaches all around the state now have nutritionists that they know and can consult for assistance.

4. What coaching methods and training strategies have proven to be successful for advancing the skills of young wrestlers?

Hellickson: Talent alone can make a wrestler good, but persistent practice of technique with a good drill partner is essential to make a wrestler great. Drilling of maneuvers over and over allows a wrestler to simulate as many situations as possible in preparation for whatever he may face in a match. A wrestler needs three or four attacks with four or five methods of finishing the attack. He can never predict how an opponent will react, but by simulating in practice as many positions and responses as possible, a wrestler will be able to execute a successful finish that scores points. Drilling speeds for new technique should be slow at the start, but eventually the wrestler should be executing at speeds similar to those used in competition. The partner needs to react in ways to provide the offensive wrestler the proper feel of position, pressure, and leverage. Reactions will vary too, to simulate all scenarios. The key here is repetition. Repetitions engrain the motor skills so the wrestler doesn’t think about execution for a specific defense; he spontaneously reacts to score.

Landry: Young athletes need to have fun, so it important to make any drill into a game or contest. The younger wrestler has a shorter attention span and will need to change drills or activities more frequently than will the older wrestler.

Anderson: An individual wrestler must be willing to make adaptations in personal style to meet the increasing levels of competition by addressing weaknesses, working tirelessly until the weaknesses are eliminated, and then sequentially attacking and eliminating other weaknesses. Wrestlers who do this eventually have very few weaknesses, thereby becoming highly skilled and successful wrestlers.

5. Cauliflower ear and skin infections are unique ailments in this sport. What precautions should be taken to minimize the risks of these and other types of injury in wrestling?

Landry: Cauliflower ear is preventable by the consistent use of a snug-fitting headgear. Loose-fitting headgear slides on the ear and can cause injury. Often, a wrestler gets careless, leaves the headgear off during a brief time on the mat, and injures the ear.

Some of the bacterial and fungal skin infections are preventable by frequent mat washing with a good antiseptic soap. This will not prevent

Herpes virus infections that are transmitted by skin-to-skin contact. Competitors should seek medical attention for any rash to help prevent its spread to teammates. Newer antimicrobials have helped us minimize the time off the mat for the wrestler with a skin infection.

Anderson: I agree with Dr. Landry that a well-fitted ear protector is the best prevention against formation of cauliflower ear. A proactive plan emphasizing prevention is imperative, especially for warding off skin infections. Cleanliness is paramount for both the wrestler and the facility. Wrestlers should shower after every workout with emphasis on cleansing both the hair and the body. Mats should be cleaned with an appropriately formulated cleanser at least twice daily, more often with heavy use. Proper cleaning measures should also be taken with laundry. As infections will occur despite the best preventive techniques, isolation of the infected wrestler must continue to be practiced. The prophylactic use of drugs (valacyclovir, acyclovir) to suppress outbreaks of Herpes infections has some research support and is gaining popularity as a means to control recurrent outbreaks of the disease.

Hellickson: Wrestling is the ultimate contact sport, and in such a sport, injuries are bound to occur. By maintaining a strength training program with proper techniques that maximize flexibility, wrestlers can help prevent injuries and experience a prompt recovery if and when an injury does occur. In the event of an injury, a wrestler is well advised to give the limb or joint time for rest and recovery. The same goes for skin infections; take the time to heal, and prevent spreading a permanent skin condition to others on the team. There is little sense in wrestling too soon and risking further injury. I'd prefer that a wrestler take a little more time for recovery, even if it means missing a match or two, and come back at full strength and health for the most critical part of the season.

6. What nutrition practices do you recommend during in-season training?

Sossin: Once an appropriate and realistic wrestling weight has been established and achieved, nutrition emphasis should be on maintaining and stabilizing weight to achieve peak performance. In order to accomplish this, the following guidelines for wrestlers are recommended:

- Following the Food Guide Pyramid, choose a training diet that is high in complex carbohydrates (55-60% of total energy), moderate in protein (20%), and low in fat (20-25%).
- Drink to stay hydrated, and replace 150% of sweat loss (body weight loss) after exercise.
- Before a match, consume a high-carbohydrate, easily digested meal.
- Eat or drink carbohydrates to replenish glycogen after practice or matches.
- Maintain strength and energy by avoiding weight cycling or rapid weight loss.
- Eat small-to-moderate sized meals every 3-4 hours to help maintain steady glucose levels and avoid "crashing." This will help control appetite and reduce binge eating.

It is important for wrestlers to avoid the common restrictive eating patterns prior to competition, followed by binge eating afterwards. This pattern is detrimental both to athletic performance and to psychological well being. Wrestlers who are in tune with their body needs are much more likely to be successful and enjoy the sport of wrestling to its full potential!

I believe that meal replacement drinks such as GatorPro are valuable adjuncts to a wrestler's diet. They can be beneficial when consumed before a match because they keep weight gain to a minimum due to the low stool residue, yet they provide needed calories and fluids. They are also absorbed more quickly than solids and can be consumed closer to competition. The wrestler must experiment in advance to determine which drinks best suit their individual needs. High-carbohydrate drinks such as GatorLode may be more appropriate as a recovery carbohydrate following exercise, when sometimes appetite is reduced. I do not recommend other dietary supplements other than a well-balanced multi-vitamin-mineral supplement.

Hellickson: It is tough in the college environment to get wrestlers to comply with decent nutrition strategies. We find that wrestlers eat far too many meals in fast food restaurants. It's not that they don't have the knowledge of what to eat; rather, they have a lack of organization and discipline. The key is the well-balanced diet and ensuring that enough energy is consumed during the day. We recommended that our wrestlers eat three-to-four small meals, including breakfast, every day. When the wrestlers don't eat the right balance of carbohydrate, protein, and fat, it shows; their performance in practice is poor, and they contribute nothing to preparation for competition. We especially urge wrestlers to get adequate amounts of carbohydrate. The fad diets that encourage protein at the expense of carbohydrate might promote weight loss, but they drain wrestlers of energy for intense training. I do not recommend using dietary supplements other than multi-vitamin, multi-mineral tablets that contain micronutrients in reasonable amounts. In tournament situations when competition spans several days, we will use a high-carbohydrate beverage such as GatorLode because we know that it will help speed energy recovery during the hour or so between matches.

Landry: Ingestion of a carbohydrate source immediately after exercise to replenish glycogen stores is important during training. An energy drink or meal replacement drink is often a convenient way to provide the carbohydrate source. I do not recommend any other nutritional supplements for wrestlers. Most are ingesting enough protein and don't need supplements. Creatine is not a good supplement for most wrestlers, and I discourage its use.

Anderson: I support the idea that wrestlers should eat a well-balanced, high-carbohydrate diet based on the Food Guide Pyramid. After workouts and competitions, I recommend high-carbohydrate meals or drinks to help restore muscle glycogen. We use meal replacement drinks like GatorPro after weigh-ins and after competitions, especially in tournaments.

7. What hydration strategies are most effective for preparing athletes for dual meets and tournament competition?

Sossin: I spend a lot of time discussing hydration with wrestlers and coaches. The wrestlers are reminded to drink **before** they feel thirsty and to establish a drinking schedule that works for each individual. I recommend that wrestlers begin hydrating the night before a match or a practice session. They should drink two cups of fluid 2 hours before, and then another cup 15 minutes before the match begins. In long practice sessions or in tournament settings between matches, especially in hot, humid environments, wrestlers should consume a cup of fluid about every 30 minutes. Sports drinks containing 6-8% carbohydrate solutions can be especially beneficial during dual meets and tournaments. They not only provide the needed fluids, but the carbohydrate can enhance performance. Additionally, there is a tendency to drink more of a sports drink

than of tap water. I always remind wrestlers to take notice of the color of their urine and to drink enough so that it is pale yellow. They should also watch out for a strong urine odor that could reflect dehydration.

Wrestlers should also weigh themselves before and after each workout or match. While rehydrating, a certain amount of the water consumed is always lost in the urine. Therefore, sweat loss, as indicated by body weight loss, should be replaced with at least 24 ounces of fluid for each pound (16 ounces) lost. Caffeine in soda, coffee, and iced tea should be avoided because it accelerates urine production. To help speed rehydration, wrestlers should make certain to consume salty foods and beverages such as sport drinks that contain sodium chloride (salt). The salt helps the body retain more of the fluids that are consumed.

Landry: Most wrestlers have learned to sip on a water bottle or sports drink throughout the day. Like other athletes, the smart ones began sipping before they are thirsty so that they will not fall behind.

Anderson: I recommend using Gatorade before and after matches to help maintain both hydration and energy levels in the wrestlers.

8. Strength and power are important factors in wrestling performance. What is your opinion about the value of weight training or other types of resistance training during the season?

Hellickson: Despite the need to regulate body weight, we emphasize weight training and strength development, but we do so across the entire season as much as is reasonable. Certainly with a full load of classes and dual meets every week, the wrestler cannot lift with the same intensity or number of training sessions per week during the season. In the off-season and pre-season, we encourage strength training three-to-four times per week. In season, we shift to circuit training to hit all muscle groups at least once a week. Empirical evidence shows that the wrestlers become weaker if they aren't lifting as the season progresses. As a part of strength development, we push our wrestlers to run hills and do sprint work, both of which fit the sport-specific nature of wrestling: short explosive efforts to develop power and strength in the lower body. This is key to the lifts and hip forces generated in the sport.

Landry: Weight training is an important part of training for wrestling. It is a power sport, and the wrestler with the most power

SUGGESTED ADDITIONAL READING:

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TRAINING AND NUTRITION FOR WRESTLING

DAILY TRAINING

Partner Drills for Improving Wrestling Techniques

- Partner should be relaxed and compliant to wrestler who initiates a move
- Initiating wrestler: explain the move and its objectives; execute the move at 50% of maximal effort
- Partner: offer no resistance other than maintaining reasonable balance and reacting as requested
- Later, partner reacts with minimal resistance but forces the initiating wrestler to determine how to complete the maneuver
- Options:
 - 1) Alternate initiating wrestler every other move
 - 2) One wrestler initiates all moves until series of options is completed

Shadow Wrestling for Improving Skills

Seven basic skills—stance, motion, lower level, penetration, lift, back step, and high arch—are vital to success in wrestling. (The last two are important for international wrestling.) All other moves are variations of these skills. A lone wrestler can develop the first five skills by practicing single- or double-leg takedowns across the mat.

- Proper form and position are critical. Use a mirror, a coach or a team member to evaluate position and mechanics.
- As proper form is established, increase speed and power with each shot taken.
- Finish each shot with an imaginary lift, trip, or fade away.

DAILY NUTRITION

- Males 16 and younger should maintain at least 7% body fat; older males should maintain at least 5% body fat.
- Never try to lose more than 2 pounds per week. This will minimize loss of muscle tissue.
 - Don't rely only on diet to lose weight; training for endurance burns fat, and weight training increases muscle; both can reduce the percentage of body fat.
 - Energy needs depend on body size. The smallest wrestlers need at least 1700 calories per day. If your weight drops more than 2-3 pounds per week, more servings of fruits, vegetables, and grains.
 - Maintain normal fluid intake and drink back 150% the weight you lose in practice or a match to minimize dehydration and early fatigue.
- Eat well-balanced meals that emphasize fruits, vegetables, cereals, and grains, which are rich in carbohydrates.
- Reduce intake of fatty foods such as butter, oils, dressings, and fried foods. Eat foods that are baked, boiled, or broiled.
- Choose fluids that help rehydrate and refuel your body. Sport drinks containing carbohydrate (14-17 grams/8 ounces) and a small amount of sodium chloride (salt) are formulated to meet these goals.
- After weighing in, rehydrate with sports drinks and consider well-balanced meal-replacement drinks or high-carbohydrate energy drinks to top off your energy reserves without causing abdominal discomfort.
- At fast-food restaurants, choose the lower-fat items such as salads, grilled sandwiches, and low-fat yogurt.