

Weight Loss, Nutrition, and Wrestling: How Old Habits Are Affected By New Statues

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Introduction

- Wrestling requires competition within strict weight classes
- Wrestlers often engage in a variety of unsafe weight loss practices to maintain a particular class to gain a perceived advantage over an opponent



Introduction

- AMA and ACSM have warned about unsafe weight loss practices since the 1960's
- Last ACSM position statement - 1996
 - Includes specific recommendations about safe and unsafe weight loss practices



Introduction

- Between 1989-91, the Wisconsin Wrestling Minimum Weight Loss Project (WWMWP) developed the first state-wide standard for proper weight loss in high school wrestlers



Introduction

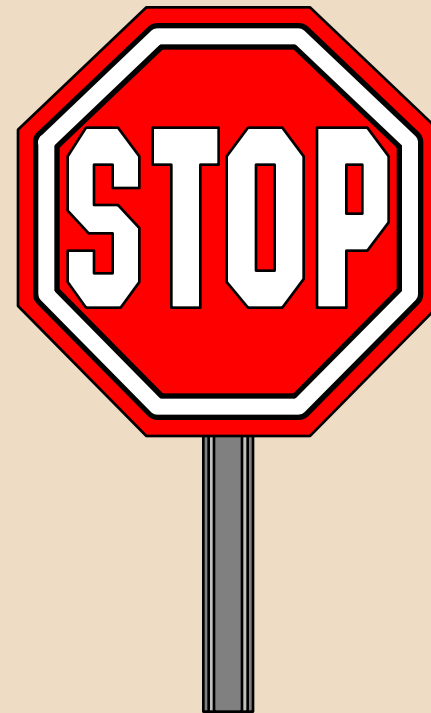
- Losing weight often is a central part of wrestling
- Concentrating on wrestling rather than losing weight will make one a better wrestler
- Emphasis should be placed on proper diet and nutrition
- Gradual weight loss of 1.5% of body weight per week is best way to lose fat and retain muscle

Introduction

- Fasting causes the body to use muscle protein for energy even if fat is available
- Rapid weight loss can result in both muscle tissue and water loss
- Rapid weight loss can also result in a decrease in maximum oxygen uptake and decrease in isometric strength

Poor Dietary Methods

- Fasting
- “Yo-Yo” Dieting
- Diet Pills
- Diuretics
- Laxatives
- Dehydration



Fasting

- Leads to rapid drop in blood sugar
- Robs brain and muscles of energy
- Forces muscles to use muscle protein for energy -- even if fat is available

“Yo-Yo Dieting”

- Alternating between binging and fasting leads to the body holding onto calories more efficiently making it more difficult to lose weight

Diet Pills

- Drugs with ephedrine or pseudoephedrine are “speed-like”
- Can lead to physical as well as psychological effects
- Can interfere with function in class

Diuretics

- Prescription medication used for those with hypertension and fluid retention
- Type of diuretic and dosage is prescribed on an individual basis
- Acts directly on the kidney
- Side effects include weight loss, electrolyte imbalance, GI upset, vertigo, jaundice, paresthesias, fainting, hyperglycemia, rash, tinnitus, hearing loss, blood disease, death

Laxatives

- Available as prescription and OTC to promote a bowel movement
- Type of laxative and dosage is prescribed on an individual basis
- Act directly on the intestines to alter water and other ion pumps
- Side effects include nausea, rash, bowel obstruction, vomiting, abdominal bloating, cramps, electrolyte imbalances, laxative dependence

Dehydration

- Decrease in muscle strength and endurance
- Decrease in blood flow to muscle tissues
- Impaired ability to regulate body temperature

Dehydration

- THE USE OF RUBBER SUITS, “PLASTICS,” SUANAS, STEAM ROOMS, DIURETICS, AND LAXATIVES ARE AN UNACCEPTABLE AND DANGEROUS METHOD OF WEIGHT LOSS

Rubber Suits, Plastics, Saunas, Steam Rooms

- Lead to weight loss via dehydration
- Do not allow evaporation of sweat for cooling of the body
- Can lead to heat exhaustion, heat stroke, electrolyte imbalances, rhabdomyolysis, death

Dehydration

- Keep weight at 2-3 pounds of class at all times fully hydrated
- Dehydration should be restricted to day of weigh-in
- If fully hydrated, weight will be lost quickly by exercise
- Should not lose more than 1-2 pounds by this method
- Restriction of water should only be done 8-12 hours before a match

Rehydration

- Ideally, the body can rehydrate approximately 2 pints per hour
- It takes 4 to 6 hours to rehydrate fully after dehydrating to make weight
- Thus, the less dehydration one does, the less muscle strength and endurance is effected
- Rehydration should be by water or diluted carbohydrate energy drinks
- High carbohydrate energy drinks can delay stomach emptying or lead to fall in blood sugar during a match

Why Do We Care?

- In 1997, there were 3 deaths in college wrestling
- These were the first recorded deaths from weight loss in the history of the sport
- All were related to unsafe weight loss practices

Why Do We Care?

- North Carolina - Cause of death indeterminate
- Wisconsin - Cause of death hyperthermia
- Michigan - Cause of death rhabdomyolysis

At The Collegiate Level

- Rule changes were immediately enacted at the collegiate level but took approximately three years to fully implement
- The goal of the changes were the following
 - Elimination of weight loss practices that could risk the health of the athlete
 - Focus on competition, not weight control
 - Recommendations should be practical, enforceable, and scientifically based

At The Collegiate Level

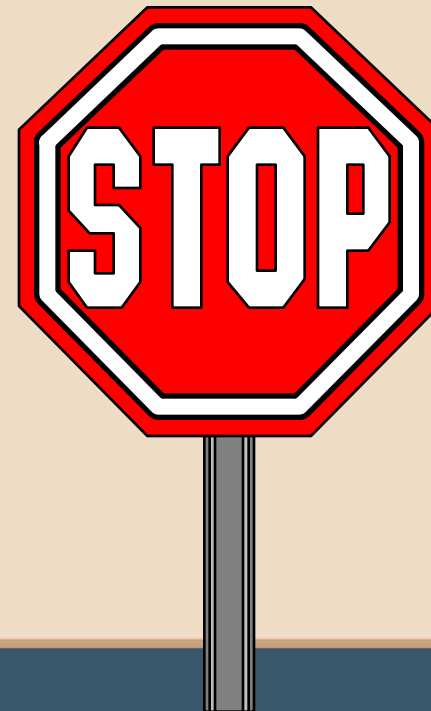
- Rule changes included:
 - Establishment of a computer program to allow for weight management and certification
 - The program should do the following
 - Establish a healthy minimal body weight through body composition and hydration assessment
 - Development of a gradual and safe weight loss plan that includes nutritional education
 - Development of a nutrition education program that is directed to the coach, wrestler and parents

At The Collegiate Level:

- Minimum body fat of 5% for all wrestlers
- A mandatory 7 pound weight addition to all classes
- Establishment of Weigh-In immediately before matches
- Establishing daily weigh-in for multiple day tournaments
- Training in CPR and first aid for all coaches

At The Collegiate Level

- Banishment of the use of all vapor-resistant materials and saunas to prevent dehydration
- Use of IVF for rehydration, laxatives, diuretics, and emetics were prohibited



History

- 1992
 - Average weight gain after weigh-in done 24 hours before a match was 8 pounds
 - No weight management program in place
- 1998
 - Average weight gain after weigh-in done 2 hours before a match was 6 pounds
 - No weight management program in place

History

- 1999
 - NCAA Weight Management Program in place
 - Data from the 420 1999 NCAA National Qualifiers
 - Average weight gain after weigh-in done 2 hours before a match was 1.5 pounds
 - Average body fat was 8.47%
 - 6.74 pound loss from pre-season alpha measurement
 - 2.4% decrease in body fat from pre-season alpha measurement

At The High School Level

- Rule changes have been slower to come about as most states have a State High School Athletic Association responsible to legislate rules concerning safe weight loss in their own state.

What's New

- August 2001
 - The National Wrestling Coaches Association (NWCA) in conjunction with the Medical Advisory Board of the National Federation of State High School Associations (NFHS) began to formulate recommendations to State High School Athletic Associations to establish a weight management program that included body fat composition

What's New

- This program will allow for weight management/certification policies that include determination of body fat composition, hydration, and establishment of a safe weight loss plan leading to a minimum wrestling weight class

What's New

- This plan first implemented in September 2004
- Guidelines attempted to be in place nationally in any state with a wrestling program by 2005-06

What's New

- Pilot programs were established in many states including New Jersey



What's New

- The big change in scholastic wrestling last year was formation of new weight classes for 2011-12. The 14 classes are as follows: 106, 113, 120, 126, 132, 138, 145, 152, 160, 170, 182, 195, 220, 285.



Before Season

- Recommended to start weight loss process one month before start of season.
- There should be periodic checks of weight, height, and body fat throughout the year to monitor weight changes, growth and determine percentage body fat

How Does It Work

- Coaches
 - National Wrestling Coaches Association (NWCA) has developed a Weight Monitoring Video to be shown to all coaches preseason
 - In addition, coaches should be required to attend a two hour course on nutrition, healthy eating, and dangers of improper weight loss
 - Should lead a weight loss meeting with wrestlers before start of the season

How Does It Work

- Wrestlers/Parents
 - National Wrestling Coaches Association (NWCA) has developed a Weight Monitoring Video to be shown to all wrestlers preseason
 - In addition, wrestlers should be required to attend a one hour course on nutrition and healthy eating using instructors determined by the individual school district
 - Parents should be involved as they will be the providers of meals to wrestlers

The Assessor

- Consensus reached by NWCA as to the necessity to train health care professionals to perform body fat determination
- Health care professionals should be trained and certified to perform analysis as “Assessors” in the method chosen by their respective state
- This training should be a minimum of two hours of classroom instruction and up to three hours of practical training
- There should be annual education updates

Urine Specific Gravity

- Before body fat determination, urine specific gravity tests should be performed on all athletes to assure hydration
- Urine specific gravity for NCAA athletes should be 1.020
- Urine specific gravity for high school athletes should be 1.025
- Evidence of dehydration via concentrated urine would require measurement on an alternate day

Weight Certification Day

- Refractometer measurements to record urine specific gravity
- Measurements cannot exceed 1.025
- May not proceed to next step if not adequately hydrated

Body Fat Determination

- Weight is often not the problem, it is the body fat on an athlete
- “Excessive” fat does not help in athletic performance
- During wrestling season, wrestling body fat should remain at 7% or above for males and 12% or above for females unless the athlete is NATURALLY lower
- This number was agreed upon by the NWCA based on the results of numerous scientific papers written on weight loss and wrestling

Body Fat Determination

- No consensus by NWCA as to body fat composition analysis tool to use
 - skin calipers
 - hydrostatic weighing
 - bio impedance
 - air displacement

Weight Certification Day

- In NJ, bioelectrical impedance measurements to record body fat. May be rounded down.
- Minimum body fat for boys is 7 % and 12 % for girls
- A one pound allowance is programmed into the scale and assessor is allowed down to lowest pound. (e.g. 120.8 = 120)

Weight Certification Day

- If the wrestler's lowest certified weight falls exactly at one of the 14 classes at 7/12% s/he may not wrestle below that weight
- If the wrestler's lowest certified weight falls between 2 classes at 7/12%, s/he must be certified at the higher class

Weight Certification Day

- The Minimum Weight Certification Individual Form must be signed by a licensed physician to allow a wrestler to compete
- Parents must approve the Minimum Weight Certification Individual Form

Weight Certification Day

- No wrestler may compete until analysis is completed
- Initial measurements of all transfer students should be obtained
- If this cannot be obtained or was not performed, body fat composition must be obtained before this wrestler may compete, optimally before the wrestler's first practice

Appeals

- In NJ, no appeals are accepted on weight class certification

Weight Certification Day

- Cheating in NJ is punishable by missing next two scheduled competitions as well as provide an accurate certification

The NWCA Program

- The Alpha Report
 - Measurement from body fat determination would be plugged into the NWCA Automated Weight Certification Internet Calculator Program



The NWCA Program

- The program will record and determine the following:
 - Name
 - Alpha date
 - Alpha weight
 - Alpha body fat
 - Minimum wrestling weight
 - Minimum class
 - First date in which they can compete at that lowest allowable weight class

The NWCA Program

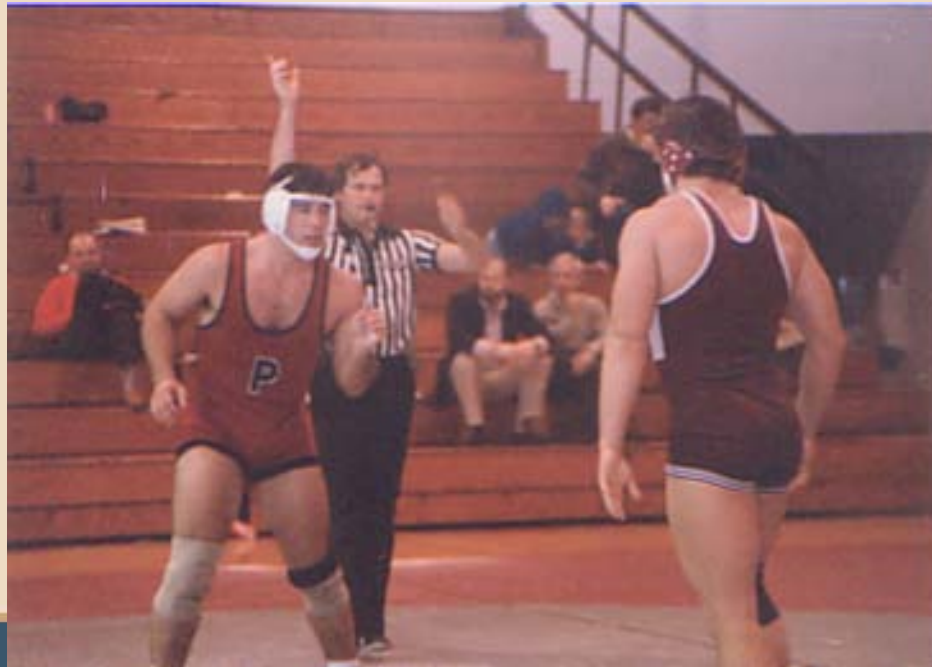
- The projected earliest date to wrestle at the predicted minimum weight will be broken down into weeks
- At no time should a wrestler be allowed to wrestle in a class that would require him to lose more than 1.5% of his original weigh-in weight per week from the original date of measurement

How Much Is Too Much?

- Start Early
- No more than 2-3 pounds per week, or no more than 1.5% of body weight each week after initial weight assessment
- NWCA Weight Loss Program is set automatically to allow for loss of 1.5% of body weight

How Much Is Too Much?

- A growth allowance of 2 pounds is recommended after January 15th of the season by the NJSIAA and cannot be used to make certified weight.



Nutritional Advice Component

- Wrestlers may log onto the NWCA Calculator for individual weight loss and dietary advice
- By entering age, gender, alpha weight, height, activity level, and maximum weight loss, an individual total caloric energy expenditure can be calculated and an individual dietary plan can be established

Ideal Weight

- Once target weight is reached, athletes may not wrestle more than one class above the class for which the actual weight, at the time of weigh-in, qualifies that wrestler.

Ideal Weight

- For example
 - Certification at 140
 - Can only weigh in at 140 or 145 without losing 140 eligibility
 - Can wrestle at 152 at meet time without losing 140 eligibility if weighs in at 145 or less
 - If weighs in above 145 class, may wrestle at 152 but loses 140 eligibility as he has weighed in greater than one class above lowest allowable class

Team Certification

- The Minimum Weight Certification Team Form is signed by the coaching staff and principal/head master of participating school
- A copy is sent to the state and retained by principal, coach and athletic trainer at the school

By The Numbers

- Wrestlers should ideally consume between 1700 to 2500 calories per day
- Calories ingested must be less than those expended



By The Numbers

- 15-20% Protein
- 60-70% Carbohydrates
- 30% or Less of Fat
- Dietary ingestion such as this negates need for supplements

Satisfying Hunger

- Reduce Portions
- Eat smaller, more frequent meals
- Increase amount of time one chews
- Drink water before eating
- Decrease calories ingested and keep written log of calories consumed – do not drop below 1500
- Use low calorie items when available

Satisfying Hunger

- Eat foods that are baked, broiled, boiled or poached
- Avoid breaded or fried food
- Avoid foods covered in gravy or sauces

Satisfying Hunger

- Limit use of butter, margarine, mayonnaise, sour cream, cream cheese, salad dressings, and whipped cream
- Substitute with barbecue sauce, ketchup, mustard, relish, and vegetables
- Avoid salt
- Avoid caffeine
- Try to use skim or 1% milk

Pre-Competition Meal

- Can consume approximately 600 calories 2 hours before a match without worry
- Eat food with which you are familiar

Pre-Competition Meal

- Good choices include the following:
 - 2 cups of pasta with 1/2 cup of sauce (caution if get GI upset from sauce)
 - 2 cups of rice or potatoes
 - 2 cups of vegetables - preferably starch based
 - 4-6 ounces of broiled chicken with one half a bagel

Pre-Competition Snack

- Can consume approximately 300 calories 1 hour before a match without worry
- Again, eat foods with which you are familiar

Pre-Competition Snack

- Good choices include the following:
 - one medium banana
 - granola or energy bars
 - 1/2 cup of trail mix
 - 3 oz box of dried fruit
 - 28 animal crackers - about one half a package
 - 16 oz of Gatorade or other sports drink

GI Upset

- If you get frequent stomach upset, you may use a meal replacement shake
- Consume amount equal to approximately 500-600 calories and be sure that it contains carbohydrates
- Remember many meal replacement shakes are protein based

Exercising to Lose Fat

- Must exercise 30 minutes to one hour to begin losing fat
- Wrestling, however, is more an anaerobic activity than aerobic
- Wrestling involves short bursts of maximum activity

Exercising to Lose Fat

- Self training at home should involve short bursts of activity for 30-40 seconds followed by recovery cycle of 90-120 seconds (sprint/jog, sprint/cycle)

Continue to Strength Train

- Weight cutting often leads to decrease in strength and endurance during the course of the season
- Continuing to strength train can offset this loss and hold onto off-season gains

Summary

- Start now, results best achieved when begun at least one month before certification day
- Remember, there should now be weight checks done throughout the year.
- Checks should be done not only in season but also in Sept, Nov, Jan, and May



Summary

- Lose Percent Body Fat, Not Weight
- Lose 2-3 Pounds per Week and Start Early
- Reduce Fat, Increase Complex Carbohydrates
- Eat a Balanced Diet



Summary

- Drink As Much Water As Possible
- Eat Smaller Meals
- Burn Fat Through Exercise
- Do Not Rely on Dehydration
- Continue to Strength Train



Thank You

