

How Do The Big Boys Train?

Only a generation ago, weight training was oftentimes limited to the off-season, or done only if the wrestler wanted to do it on his own. Strength training has now become an integral part of the training of wrestlers, with highly developed, year-round programs being used. In order to see what some of these programs were like, last fall I started contacting the top wrestling programs, based on the 2003-04 NCAA Division 1 tournament results. Russ Hellickson, head coach at Ohio State, said that while at Wisconsin in the late 70's, he contacted a wide variety of experts, including athletes, coaches and scientists, and found almost no agreement – machine, free weight, lift fast, lift slow, high rep, low rep. He feels that there is no exclusively perfect system for our sport, but we have to include a variety of methods. Regardless of the method he says, “don’t waste time sitting around talking in the weight room, lift with the intensity of our sport!” I sent a survey to these schools and asked that it be forwarded to the person in charge of the strength training. I found that all of these schools have extensive, well-planned programs that are either conducted by a strength and conditioning specialist, an assistant coach in charge of strength, or a combination of the two. As Hellickson suggests, they have all combined a variety of methods in establishing their programs. I have summarized the survey results in the following table.

Strength Training Survey Results

School	Equipment	How do you Divide the Year	Loading	Times/Wk	Exercises	Philosophy
Illinois	Mainly free weights, power racks, platforms Some machines for legs and cable crossover unit	Post-season (spring) Off-season (summer) Pre-season (fall) In-season (winter)	Heavy: 3-4 sets of 6-10 reps	3 (M, W,F) or 4(M,T,Th, F) Depending on individual	Bench press, rows, overhead press, curls, tricep extensions, towel pull-ups, squats, and cleans	Must lift year round and individualize to meet specific needs of wrestlers
Iowa	Free weights-Olympic and dumbbell	Pre-season In-season Tournament time Post season Summer	Done individually based on needs	M-W-F	Olympic type lifts And a lot of push/pull work on Hammer and dumbbells	Explosion, quickness, and Power
Iowa State	Barbell and dumbbell in all phases. Very little machine work.	Off-season Pre-season In-season	70-95% 3-5 sets 2-8 reps 80-97% 3-6 sets 1-6 reps 50-85% 4-15 reps	4x week 3x week 2x week-1 day strength/power, 1 day endurance	Upright row, BB row, High pulls, Mil. Press, Bench, Curls, Reverse Curls, CoreShrugs. Test-Hang Clean, Squat Bench, Weighted pullups	Improve total body strength, power, and endurance
Lehigh	Free Weights Hammer Strength Machines	Hypertrophy 1 Max Strength 1 Conversion to Power 1 Maintenance 1 Hypertrophy 2 Max Strength/Maintenance Conversion to Power 2	3 sets 8-12 reps 5-6 sets 2-7 reps 2-3 sets 4-6 reps	3x week 3x week 1-3x week 0-2x week 2x week 2x week 2x week	Squats, Cleans, Bench, weighted pull-ups, Dumbbell row, Shoulder press, Abs	Hypertrophy-Gain muscle Max Strength-Gain Strength Conversion to Power-Make strength gains functional for wrestling
Michigan	Free Weights Hammer Strength Machines	In-season (from mid Oct to March) Post Season	Generally 3 sets of 10, 8, 6 reps	1-2 x week 3x week	High pulls, squats, bench press, dips w/weight Range of machines includes tricep extensions, rows, curls, pulldowns, leg curl, leg extension, pullups	Maintain Strength Gain strength
Minnesota	Free Weights Hammer Strength Machines	Basically have an in-season and out of season	Depending on if the athlete needs strength or endurance – 4x4, or 3x12 respectively. 2 push days and 2 pull days.	4x week	Cleans, Squats, Bench, Pullups, Pulldowns, Pushups, Abs, & Neck	Try to meet the specific needs of our wrestlers and increase strength and endurance.
Nebraska	Hammer Jammer, Hammer Push/Pull Circuit, Free Weights, Cable System, Husker Power Transformers	Pre-season In-season Post-season Summer	Metabolic & Explosive Maintenance Metabolic & Explosive Explosive Training	4x week 2-3x week 4x week 4x week	Hang & Power Cleans, Squats, Push/Pull, Bent over rows, Seated rows, Incline/Decline bench, Flys, Curls, Shoulder Press, Rotator cuff workout, Dips, Pullups, Lunges, Abs, Back Ext., Tricep Ext., Explosive Lunges, Box Jumps	Metabolic-Increase muscle mass Must train the body the way you want to compete-Train slow. Perform Slow! Train your muscles explosively since this is how they react in a match.
Ohio State	27 Hammer Strength Units and dumbbells in wrestling area. Free weights, racks and platforms in strength facility	In-season Post-season Pre-season (summer)	Generally low to higher reps as season progresses	4/week-Sun, Tu, Th, Fri 2 days Hammer 2 days Free Wts.	Free Wts-Cleans, squats, bench Machines and dumbbells-lots of push/pull, often with just one arm/leg at a time. 1 week each month bodyweight exercises rather than machines-chinups, climb rope, overhead ladder	Move from absolute strength to strength endurance as we move into the season. Always lift with intensity!
Oklahoma	90 % Free weights 10% Machine	Post Season Pre-Season In-Season	3-5 sets 4-10 reps 2-5 sets 6-12 reps Day 1: 2-6 sets 2-6 reps Day 2: Circuits	3x week 3x week 2x week	Power cleans, hang cleans, snatch, push jerks, front squat, back squat, split squat, lunges, Glute/ham, bench, pull-ups, rows	Pre-teach technique, increase mass, core strength, shoulder stability Season-Explosive power & strength, plus circuits for endurance Post rehab & overall strength
Oklahoma State	Free Olympic Weights Ground Based Hammer Strength Units	Summer Pre-season In-season Post-season	Rotates cycles of metabolic circuits and hypertrophy . In-season 10-8-6 pyramids, and remove legs for end of season	3x week 4x week 3x week	Cleans, Squats, Lunges, Step ups, Box Jumps, Plyo Pushups, Rows, Curls, Hammer Ground Based circuit, Core exercises	Get as strong as possible, then change to power. Plyo's are always in for power and explosion

While there is still some variation in these programs, there are many commonalities. They lift year-round. This includes during the season. Most in-season lifting is done in a morning session. Out of season sessions are seen in both am and pm. They all include some large muscle, multi-joint movements such as squats and cleans. For the most part they move from absolute strength gains when out of season, to a focus more on strength endurance and metabolic conditioning while in-season. Several use post-season training to rehab from injuries and to work on weak areas shown from their mat performance. Chris Ayres and Tom Koch from Lehigh cycle through three phases twice in a season. This allows for two peaks, one in January and one in mid-March. There is a huge emphasis placed on power and explosiveness. Gary Calcagno of Oklahoma State says he tries to include some explosive aspect into each and every workout.

I asked if there were any “special exercises” they employ. A few programs mentioned grip exercises. At Oklahoma State they “pinch plates,” holding two plates together with one hand. Iowa and Iowa State both mentioned the use of “fat” bars for some exercises. Mitch Clark (Ohio State) told me about something that I had never heard before-climbing chains! He said that it requires a total concentration on your grip that goes beyond a rope. At Illinois they flip huge tires for a total body effect. Oklahoma also lists some “strong man” activities such as sled pulls and sandbags.

Regarding any testing of lifting or other performance tests, Iowa tests some lifts for a max every 5 weeks. Brandon Eggum of Minnesota tests some lifts and running performances, but reminds us that there is not always a perfect correlation between strength in the weight room and strength on the mat. Mike Greenfield of Nebraska tests the bench squat and clean. He also tests the vertical jump, 300 yard shuttle run, and pro agility run. He feels that his wrestlers take the testing very seriously because it exposes any weaknesses in front of the team, and echoes Eggum’s thoughts when he says, “performance testing is not always the best gauge of your wrestlers, because there are many different ways to be successful in our sport.

Andy Moser of Iowa State, stressed the need for avoiding muscular imbalances (which can lead to injury) by using opposing muscle groups. He along with others discussed the need to train the athletes proper form in cleans and squats. Some of these power movements are used at the end of training and conditioning, so the wrestler learns to produce power when fatigued.

All of these programs accommodate the needs of individuals, especially the need to limit the hypertrophy (increased muscle mass) of some wrestlers who cannot afford to grow out of their weight class. Of course some wrestlers need to gain weight for their weight class. The in-season programs attempt to maintain strength gains made earlier. Mike Greenfield’s Nebraska program is fairly typical and uses 60-70% of max and 6-8 reps, in order to reduce muscle loss from wrestling workouts and weight cutting.

I want to thank the schools and the coaches who participated in this survey. Keep up the great work! For a great article on strength training for wrestlers, I recommend that you get a copy of William Kraemer et al, “The Physiological Basis of Wrestling: Implications for Conditioning Programs,” in the *Strength and Conditioning Journal*, Vol 26: 2 Pages: 10-15, 2004. It is the issue with Cael Sanderson on the cover.