Strength and Conditioning for Wrestling
By John Amtmann

When Joe Casey and I met up for a day of kayaking on the Alberton Gorge this past summer, I didn’t know whether I was more jacked about the day of paddling ahead of us or about the new wrestling magazine he was putting together. As a long time grappler, I felt a magazine like this would be well supported in Montana and neighboring states, and I am proud to contribute with a column focusing on strength and conditioning for wrestling or other grappling sports your wrestlers may participate in. Though I have experience in scholastic wrestling, most of my grappling experience comes from judo. I have been training in judo for about 28 years, with some experience in submission grappling, Brazilian Jiu Jitsu, and mixed martial arts thrown in. Additionally, I teach for the Applied Health Science program at Montana Tech and one of the core courses that I teach is KIN 4356 Strength and Conditioning: Theory and Application, which is a comprehensive course detailing the fundamentals of creating strength and conditioning programs for health and fitness of the general public, as well as for performance enhancement of athletes.

So, why should we promote strength and conditioning for our athletes? Every wrestling coach knows the answer from experience: a stronger more conditioned athlete is usually less likely to be injured and, all else being equal, is more likely to be successful competitively.

As a wrestling coach I believe your two top priorities should be: (1) to prevent injury and (2) to improve performance.

Preventing injury in sports by training the specific joints identified as frequently injured is often referred to as prehabilitation, and identifying injuries incurred in
specific sports, and developing programs to prevent them, is a top priority of strength and conditioning coaches in all sports. It is also the wrestling coach's responsibility to be knowledgeable of the most common injuries in wrestling, and how the strength and conditioning program will be of benefit to their athletes.

Common injury sites in wrestling occur at the knee, shoulder, ankle, head, elbow, and neck. Although neck injuries are most frequent in football and hockey, the neck injuries in grappling sports like wrestling and judo, though relatively rare, have been no less catastrophic. Previous studies reporting on the sport of wrestling have documented a wide range of injury rates, from 10% to 70%, depending on a variety of factors including the definition of "injury", the population being studied, and whether a tournament or a season was evaluated.

Pasque and Hewett performed a prospective study for The American Journal of Sports Medicine to evaluate injury patterns in wrestlers. A large population of 458 high school wrestlers was followed during one competition season. There were 219 injuries in 418 wrestlers followed throughout the season for an overall injury incidence of 52 injuries per 100 wrestlers per season. The most commonly injured areas were the shoulder (24%) and knee (17%). The researchers noted that the majority of injuries occurred in practice (63%), although the injury rate was higher in match competitions. Sixty-eight percent of practice injuries occurred during hard wrestling, 23% during drills, and 9% during conditioning. 67% percent of all practice injuries occurred during the last half of practice. Similar findings were seen in match competition, in which 42% and 36% of injuries occurred in the second and third periods, respectively, versus only 22% in the first period. Other researchers noted higher injury rates during competition.

It is logical to think the injuries in wrestling and judo would be similar since judo is a jacketed form of wrestling. Finnish researchers used national insurance records to analyze the types of injuries sustained by athletes participating in soccer, ice hockey, volleyball, basketball, judo and karate over
a five year period of time (1987-1991), and karate and judo had the highest rates of injury reported during this time. Approximately 70% of the injuries reported occurred during practice, and upper limb injuries were most common in judo compared to the other sports. The researchers also reported that dislocations were relatively more frequent in karate and judo.

So, athletes in grappling sports may suffer injuries at many locations on the body. Though there is conflicting evidence regarding whether the rate of injury is higher in practice or competition, the implications for coaches are clear: Create a strength training program that is comprehensive and balanced in nature.

**Question #1:** What is the difference between weightlifting, power lifting, weight training and strength training?

Olympic weightlifting is a sport that requires the athletes to train for their best one-repetition maximum performance in two lifts: the clean and jerk, and the overhead snatch. Power lifting is also a sport focusing on one-repetition maximum performances of three lifts: bench press, squat, and dead lift. On the other hand, weight training is a form of exercise using weights, usually commercial, as resistance to improve musculoskeletal strength and endurance. Strength training is a form of exercise using any type of resistance to improve musculoskeletal strength and endurance. Strength training, also generically referred to as resistance training, may use surgical tubing, medicine balls, sand-bags, heavy bags, and other implements as forms of resistance.

**Question #2:** Do you want to train your wrestler to perform better in the sport of wrestling, the sport of power lifting, or the sport of weightlifting?

Many coaches recommend the power clean, and other technical lifts, to improve power specific to sports. It kind of makes sense based on the title of the lift alone, the “power” clean; however, I completely disagree. The only athletes that need to spend the vast amount of time needed to perfect the highly technical lift of the power clean are Olympic weightlifters.

Wrestlers should wrestle, and should combine improvements in technical proficiency in wrestling, not weightlifting, with balanced improvements in strength and conditioning to prevent injury and enhance performance.

A large number of coaches use the power clean under the mistaken notion that the lift is specific to their sport. Whether it’s wrestling, football, boxing or tennis, they believe it will improve power specific to that sport because of this lift.

In the next issue, we will take a closer look at the power clean and present some research that will allow you to make an informed decision regarding whether or not you should include the power clean in your athlete’s program. Also, future issues will address developing safe and effective strength and conditioning programs for your wrestlers. Until next time, train hard!

John Amtmann, Ed.D. is a Professor of Applied Health Science at Montana Tech in Butte, Montana. In his 23rd year of teaching at Tech, Amtmann is the head coach of the Judo Club and enthusiastically continues to train in judo, grappling and MMA. He is also a certified strength and conditioning specialist (CSCS) with the National Strength and Conditioning Association. He is also certified as an Exercise Specialist with the American College of Sports Medicine.

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